The Relationship of High School Athletes' Goal Orientations, and Perceptions of the Climate to Their Mindful Engagement in Sport

By

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Abstract

This pair of studies examined the mediational role of high school athletes' mindful engagement in sport, in the relationship between their goal orientations and perceptions of the motivational climate on their teams to select motivational outcomes. Study 1 was designed to test the mediational effect of high school male athletes' mindful engagement in sport in the relationship between their perceptions of a caring, task-, and ego-involving climate to their coachability, and future desire to participate. Correlation analysis revealed that perceptions of a caring and task-involving climate were positively and significantly associated with mindful engagement, coachability, and future desire to participate. The final mediation model results suggest that high school male athletes' mindful engagement mediates the relationship between climate (i.e., caring and task-involving climate) to coachability. Their coachability was negatively and directly predicted by the perceptions of an ego-involving climate. Study 2 examined two objectives: a) a moderation effect of task orientation in the predictive relationship of ego orientation to mindful engagement. b) the mediational role of high school female soccer athletes' mindful engagement in the relationship between their perceptions of a caring/task-involving climate and task orientation to their practice strategy use and ability to peak under pressure. Results of correlation analysis revealed that a task-involving climate and task orientation were positively associated with mindful engagement, practice strategy use, and peaking under pressure. Perceptions of a caring climate were only positively correlated to mindful engagement. The final mediation model results suggest that both high school female soccer athletes' mindful engagement and practice strategy use mediate the relationship of their perceptions of a caring/task-involving climate and goal orientations to their ability to peak under pressure. Results suggests that coaches' efforts to create a positive and supportive climate in

sport may help athletes be more mindfully engaged in their sport, and thus experience more positive outcomes.

Study 1

High School Male Athletes' Perceptions of Motivational Climate and Their Psychological Responses in their Sport

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High School Male Athletes' Perceptions of Motivational Climate and Their Psychological Responses in their Sport

Research on perceived motivational climate in sport has demonstrated a strong positive relationship between athletes' perceptions of a caring/task-involving climate to positive outcomes such as their personal effort, enjoyment, and intrinsic motivation (Fry & Gano-Overway, 2010; Harwood, Keegan, Smith, & Raine, 2015). One variable in the sport psychology literature that is currently receiving significant interest is mindfulness, the ability to keep oneself focused in the moment with a non-judgmental open mind (Kabat-Zinn, 2003). It may be that athletes who participate in more caring/task-involving sport climates where the emphasis is on personal effort and improvement, and where each person is treated with kindness and respect, would be more likely to be mindfully engaged in their current sport activity. To date, research has not examined the interrelationship between individuals' perceptions of the motivational climate to their mindfulness in sport. Therefore, the purpose of this study was to examine the relationship between athletes' perceptions of the motivational climate on their sport team to their mindful engagement in their sport activities.

Nicholls (1989) developed the Achievement Goal Perspective Theory (AGPT) to address the issue of how the motivation of all individuals could be maximized. He

indicated that the motivational climate in achievement settings such as school and sport are important contexts to consider and individuals can perceive two different climates in any achievement setting. In a task-involving climate, individuals perceive the focus to be on personal effort, improvement, and cooperation among group members, whereas in an ego-involving climate recognition is given only to the members with the highest ability and the best performances, and rivalry among teammates is encouraged. Nicholls' predicted that individuals' perceptions of the climate would be linked to their cognitive, affective, and behavioral responses.

An additional aspect of the climate that has received attention in the sport psychology literature over the past decade is the caring climate. Newton, Fry, et al. (2007) defined a caring climate as a setting "that is interpersonally inviting, safe, supportive and capable of providing the experience of being valued and respected (p.70)." This caring framework has been identified as a key factor that plays an important role associated with individuals' emotional and behavioral responses in sport and exercise settings. Together, a growing literature is showing the value of a caring and task-involving climate for participants in the physical domain.

Research grounded in AGPT in youth sport has consistently found that when athletes perceive a task-involving climate on their sport teams they report greater

personal effort, enjoyment, intrinsic motivation, and less sport anxiety, as opposed to an ego-involving climate which has been negatively associated or in some cases not associated with these positive outcomes. In a similar vein, previous studies in an adolescent sport context found the caring climate to be positively associated with athletes' adaptive responses such as their engagement in prosocial behavior, commitment to and satisfaction with their teams, positive attitude towards their coaches and teammates, and their engagement in caring behaviors towards their teammates and coaches (e.g., Fry & Gano-Overway, 2010; Gano-Overway et al., 2009). Based on their research, Boyce, Gano-Overway, and Campbell (2009) and Gano-Overway and Ewing (2004) suggested that if coaches who work with young athletes are interested in fostering their optimal practice strategy use (i.e., use of self-talk, imagery, goal setting, attentional focus, effort regulation, and incorporating instructional feedback), emphasizing and fostering a task-involving climate is significantly beneficial for pursuing those coaches' intentions. Taken together, the combination of a caring and task-involving climate in youth sport appears to play an important role for supporting adolescents' positive sport experience.

Though climate researchers have not examined a potential association with mindfulness, this is a valuable area of inquiry. Mindfulness investigations have been

conducted within the sport psychology literature, particularly over the past decade. Kabat-Zinn (2003) defined mindfulness as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment (p.145)." Brown and Ryan (2003) advocated mindfulness as a self-regulatory skill whereby individuals observe their own thoughts and feelings non-judgmentally. Athletes' mindfulness has been associated with their flow experiences. For example, Kaufman, Glass, and Arnkoff (2009) developed the Mindfulness Sport Performance Enhancement (MSPE) program to assist athletes in becoming more cognitively engaged in their sport. They found that their participants (community based archers and golfers) reported increased flow with regard to their scores on a dispositional flow scale, after four weeks of the MSPE program. Moreover, these university athletes reported higher scores on the "Clear Goals" and "Sense of Control" flow scales after 6 weeks of mindfulness training, suggesting that athletes can develop the skill of mindful sport engagement.

While athletes can engage in mindfulness training to enhance their ability to be mindful, it is possible that a by-product of being in a caring/task involving climate is that it sets individuals up to be more likely to experience mindful engagement. A caring climate is a dynamic reflection of an individuals' non-judgmental and accepting

behaviors, and a task-involving climate encourages athletes' personal effort, improvement, and cooperative actions, which require individuals' sound observation of themselves moment to moment. Conversely, as Nicholls (1989) argued, an ego-involving environment leads individuals to focus more on normative comparison and demonstrating their superior ability over others. Thus, when adolescent athletes perceive an ego-involving climate, it directs their attention more to external stimuli. This cognitive process is counterproductive to the mental focus that is required to be in a mindful state.

The purpose of this study was to examine the interrelationship among perceived motivational climate (i.e., caring, task-, and ego-involving climate), mindfulness, future desire to participate, and coachability among high school athletes. Specifically, adolescent athletes who perceive a more caring and task-involving climate are hypothesized to report higher degrees of their mindful engagement in their sport team, greater desire to continue to participate, and the perception of being open to coaching feedback. This research contributes to the literature in sport psychology with regard to understanding the processes involved in helping adolescents maximize their sport experiences. The additional outcome measures of future desire to participate has previously been reported (i.e., demonstrating a positive association with a caring/task-

involving climate: Newton, Fry, et al., 2007; Newton, Watson, et al., 2007). Coachability refers to athletes' perceptions of themselves as being open, receptive, and eager to receive feedback from their coaches without taking it personally and being upset (Smith & Smoll, 1995). Smith and Smoll (1995) found that high achieving athletes scored higher on coachability than lower achieving athletes. It is possible that when athletes are more mindfully engaged, they are more intent on using feedback from the coach to improve their skills and performance. Of interest is the relationship of coachability and future desire to participate with mindfulness across the sport domain. This exploratory work will reveal the interrelationships between these important motivational variables for adolescent student-athletes.

Method

Participants

High school male athletes (N = 164, $Mage$ = 15.58, SD = 1.18), playing on five high school sport teams (basketball, baseball, cross country, football, and soccer) from four local high schools volunteered to complete a survey in the second half of their season. The athletes were Caucasian (81%), Hispanic or Latino (7%), or represented a very small portion of a race/ethnicity (< 3%), or were bi-racial. Athletes represented each school classification including freshmen (32%), sophomore (31.7%), junior (18%),

and senior (18%). In general, the athletes reported playing soccer for 8.43 years and playing on their high school team 1.99 years. Further, 26% of the athletes indicated that soccer was the only sport they played at their high school. In addition, athletes identified the main team they played on at their high school: C Team (primarily freshmen; 17.7%), junior varsity (38.4%), and varsity (37.8%). Study information was sent to parents and athlete consent was obtained. Approval of this research was obtained by the Human Subjects Committee at the researchers' university.

Measures

All the psychometric scales in this questionnaire were adjusted to 5 point scales for participants ease when responding to the questions.

Caring Climate Scale (CCS). The 13-item Caring Climate Scale (Newton, Fry, et al., 2007) measures the degree that individuals' perceive their team environment as caring. The statements center on elements of caring and assess the extent that individuals perceive that teammates and the coaching staff on their team are nonjudgmental, supportive, accepting, welcoming, valued and treat each individual with kindness and respect. CCS sample items are "On this team the coach wants to get to know all the athletes" and "the coach accepts athletes for who they are." Participants respond to the items using a 5-point scale ranging from 1 (strongly disagree) to 5

(strongly agree). Previous studies have demonstrated sufficient internal reliability of the CCS such as α = .92 by Newton, Fry, et al. (2007) and α = .96 by Gould, Flett, and Lauer (2012) with adolescent athletes.

Perceived Motivational Climate in Sport Questionnaire (PMCSQ). The 21-item 5-point scale (Seifriz, Duda, & Likang, 1992) was employed to assess young athletes' perceptions of the motivational climate on their sport team. The PMCSQ is composed of two distinct subscales, the task- (i.e., 9-items) and ego-involving (i.e., 12-item) climate. The task-involving climate subscale items measure the degree that individuals' perceptions of the motivational climate induced by both coaches and athletes is highlighted by their personal best effort, personal growth in sport skills, and interpersonal cohesiveness/cooperativeness, and in turn, dealing with mistakes as a part of their learning process. In the opposite manner, the items from the ego-involving climate subscale measure athletes' perceptions of the environment as over valuing the best performers and outcomes, welcoming rivalry, and unconditionally punishing mistakes. Sample items are "On this team, athletes feel good when they try their best. (task-involving)" and "On this team, athletes are encouraged to do better than the other athletes. (ego-involving)" Evidence for the reliability (the task-involving α =.80 and ego-involving scales α =.84, respectively) was provided by Seifriz et al. (1992).

Cognitive and Affective Mindfulness Scale – Revised (CAMS-R). The 10-item Cognitive and Affective Mindfulness Scale – Revised short version (Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007) was employed to assess the degree that the participants are mindfully engaged in their sport experiences on the team. The composite score of this multidimensional mindfulness scale was used for this study. Participants responded to the items using a 5- point Likert scale with the following responses: 1 (Not at all), 2 (Rarely), 3 (Sometimes), 4 (Often), or 5 (Almost always). The stem for the items guided participants to answer with regard to their sport team settings. Sample items are "On this team, it is easy for me to concentrate on what I am doing." and "I am easily distracted." Feldman et al. (2007) reported acceptable reliability coefficients for the composite scale with two college student samples ($\alpha = .74$ and .77, respectively).

Future Desire to Participate (FDP). The FDP was developed by Newton, Fry, et al, (2007) and assessed whether individuals would like to continue to participate on their sport team in the next season. Participants completed the scale with regard to their sport experiences on the team. Sample items include "I want to be on this sport team again next season," and "I don't want to do this sport program next season (reversed)."

Previous studies (e.g., Newton, Fry, et al., 2007; Newton, Watson, et al., 2007) have found sufficient reliability for this scale.

Coachability (CB). The Coachability scale from the Athletic Coping Skills Inventory (Smith & Smoll, 1995) assesses high school athletes' perceptions of how they approach receiving feedback from coaches. Sample items include "If a coach criticizes or yells at me, I correct the mistake without getting upset about it" and "I improve my skills by listening carefully to advice and instruction from the coach." Researchers have reported adequate reliability with sport samples previously (α = .72; Smith & Smoll, 1995).

Statistical Analyses

A Confirmatory Factor Analysis was conducted on the scales (caring, task-, ego-involving climate, mindful engagement, coachability, and future desire to participate) to validate each factor structure simultaneously. Descriptive statistics (mean, standard deviation, range, and Cronbach's alphas) were computed for each of the scales. Structural equation modeling (SEM) was then used to examine whether mindful engagement mediates the relationship between motivational climate [caring (+), task-(+), and ego-involving climate (-)] to coachability and future desire to participate (see Figure 1) Before testing these mediation models, we applied a parceling procedure

(Little, Cunningham, Shahar, & Widaman, 2002) for all the motivational climate and mindful engagement constructs.

Results

Confirmatory Factor Analysis

First, each scale's factor structure was inspected by conducting confirmatory factor analysis without parceling. We applied .30 cutoff criterion for all of factor loadings for all the scales in this study, which Feldman et al. (2007) followed in their development of the CAMS-R. As a result, one ego-involving climate item (question 17: "every athlete wants to be the high scorer.") from the PMCSQ and one item (question 5: "I can usually describe how I feel at the moment in considerable detail.") from the CAMS-R were excluded for further analyses. The model fit was not acceptable based on the fit indices, likely because of the large number of items in the constructs. Therefore, we parceled the items following Little and colleagues' recommendations (2002). These researchers argue that parceling results in fewer parameters in the model, lower indicator-to-sample size ratio, less likelihood of correlated residuals and cross factor loadings, as well as reduced sampling error. Furthermore, parceling will not change the overall constructs and hypothesized relationships within the model.

Descriptive Statistics

Descriptive statistics (means, standard deviations, and actual composite score ranges for each scale), internal consistency (Cronbach's α) and correlations were computed for each psychological construct (see Table1). The αs for all of the scales were satisfactory ranging from .73 to .92. The mean scores indicate that athletes' reported relatively high perceptions of a caring and task-involving climate, coachability, and future desire to participate (i.e., approximately 4 or higher out of 5 points) and neutral perceptions of an ego-involving climate and mindful engagement (i.e., approximately 3.5 out of 5 points). As hypothesized, high school athletes' perceptions of a positive climate (i.e., caring and task-involving) were significantly and positively associated with their mindful engagement, coachability, and future desire to participate. On the other hand, their perceptions of ego-involving climate were significantly and negatively correlated to the aforementioned outcomes.

Mediation analysis

Following mediation analysis guidance (Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1998; Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002), three relationships were emerged as hypothesized: a. High school athletes' perceptions of the motivational climate (i.e., caring, task-involving, and ego-involving climate: independent variables) were significantly related to their mindful engagement

(mediator). b. High school athletes' mindful engagement (mediator) was significantly related to their coachability and motivation for future participation (dependent variables), and c. The relationship between high school athletes' perceptions of the motivational climate (independent variables) to their coachability and motivation for future participation (dependent variables) was diminished when their mindful engagement (mediator) was in the model.

As hypothesized, the mediation effects of mindful engagement on the relationships between the three independent variables (caring, task-, and ego-involving climate) and the two dependent variables (coachability and motivation for future participation) were tested first using structural equation model (SEM). The significance of the mediation effects was determined based on the bootstrapping method with bias corrected confidence intervals (Mackinnon, Lockwood, & Williams, 2004). If the confidence interval for a mediation effect does not include 0, then the mediation effect is significant. The initial results suggested that high school athletes' motivation for future participation was significantly influenced by climate directly, and there was no mediation path through their mindful engagement. Therefore, the motivation for future participation variable was excluded for further mediation analyses. The model (see Figure 2) now included three independent variables, one mediator, and one dependent

variable (i.e., coachablility). The results revealed adequate model fit indices (chi-square/df = 122.90/94, RMSEA = 0.04, CFI = 0.98, TLI = 0.97, and SRMR = 0.06), one mediation path (task-involving climate → mindful engagement → coachability) was found to be significant. In other words, the relationship between high school athletes' perceptions of a task-involving climate to their coachability decreased when their mindful engagement was controlled. Important to note is that this significant mediation path emerged after controlling for the direct and indirect effects of the caring and ego-involving climate to coachability (direct), and to mindful engagement and in turn, to coachability (indirect). In fact, when modeling each single independent variable in a separate model (caring, task-, and ego-involving climate) with the mediator (mindful engagement) and the dependent variable (coachability), all the three mediation models turned out to be significant in the hypothesized directions (i.e., caring and task-involving climate had a positive influence on mindful engagement, and ego-involving climate had a negative influence on it (results are available by request to the first author). Additionally as a marginal finding in this model, ego-involving climate still had a significant negative direct effect on their coachability after controlling for other direct and indirect effects. The results of this model are presented in Figure 1 and Table 2.

Discussion

The purpose of this study was to explore whether mindful engagement in sport mediates the relationship between athletes' perceptions of the climate on their teams to both their coachability and future desire to participate. Results provided partial support for the hypothesized model. To begin, the initial model revealed that the adolescent athletes' motivation for future involvement in sport was not mediated significantly by their mindful sport engagement, and the decision was made to exclude this variable from future analyses. The final model (i.e., which excluded future desire to participate) was significant.

These results indicate that athletes' perceptions of the climate on their sport teams, rather than their mindful engagement, influences their desire for future participation. It appears then, that the social structure of the team influences youngsters' desire to continue their sport in the future, as has been established consistently in the literature (Iwasaki & Fry, 2013; Newton, Fry, et al., 2007; Newton, Watson, et al., 2007). When youngsters perceive that their coaches and teammates value and recognize effort and improvement and treat one another with mutual kindness and respect, continuing their participation in the sport becomes a priority. It is interesting that the simple association between mindful engagement and future participation was positive

and significant even though this link between the two variables did not emerge in the initial path model. The hypothesized model, stemming from the AGPT and caring framework and previous research, suggests that a positive and supportive climate would create the setting for athletes to be more mindfully engaged. Since mindful engagement is associated with flow states, and flow states provide positive and pleasant experiences, it was expected that mindful engagement would mediate the relationship between climate and future desire to participate. Results revealed, though, that self-regulatory habits may play a lesser role in explaining youngsters' intention to continue their sport participation in the future, and in this case, athletes' perceptions of the climate had a direct effect on their desire to continue playing the sport.

With regard to the final model, perceptions of a task-involving climate proved to be the only significant predictor of mindful engagement, which in turn, influenced athletes' perceptions of their coachability. The features of a task-involving climate such as reinforcing effort, improvement and cooperation seem to play an instrumental role in helping high school male athletes focus on the task at hand, or be in the moment. Since athletes in a task-involving climate are focused on being their absolute personal best and maximizing their potential, it follows that they would be more likely to be in the moment, committed to doing all they could to develop their athletic skills. Being in the

moment helps athletes heighten their awareness about many facets associated with maximizing their performance such as seeking out avenues for continued growth and honestly reflecting on their current approach to sport. Pineau, Glass, Kaufman, and Bernal (2014) recently reported that athletes with higher self efficacy who were mindfully engaged in daily life were more likely to experience flow in sport. In the current study this ability to be mindfully engaged in daily life was linked to their perceptions of being coachable. Smith and Christensen (1995) identified coachability as an important characteristic of athletes who are striving to reach their potential. Coachable athletes are open, receptive, and proactive in seeking out feedback from those (e.g., coaches) who can help them improve and strengthen their athletic intellect and skills. These results reveal that the creation of a task-involving climate plays a pivotal role in helping athletes seek excellence through their mindful engagement and coachable spirit.

While previous research has indicated that perceptions of a caring and task-involving climate compliment one another and are associated with numerous positive outcomes (Hogue, Fry, Fry, & Pressman, 2013; Iwasaki & Fry, 2013; Newton, Fry, et al., 2007), caring climate did not emerge as a significant contributor to mindful engagement in this study when all three climate scales (i.e., caring, task, ego) were

included as independent variables in the model. This is likely due to the high correlation between the climate scales. Thus after controlling for task-involving climate, caring climate did not have unique contribution in predicting mindful engagement. It is important to note that the caring and task-involving climate scales were highly correlated with one another and moderately correlated with mindful engagement, so in practical terms the caring climate likely plays an important role in establishing an overall positive and supportive environment, which likely contributed to the outcome variables.

In a similar vein, perceptions of an ego-involving climate did not emerge as a significant unique contributor to mindful engagement. However, after controlling for the direct and indirect effects of the climate scales on coachability through mindful engagement, perceptions of the ego-involving climate had a significant direct effect on coachability. This finding reinforces how a coaching approach that emphasizes winning and performance outcomes might impair high school male athletes' willingness to seek, receive, appreciate, and utilize feedback from their coach. This finding may be particularly useful from a coaching education perspective. Coaches easily recognize the important value that coachability plays for athletes, yet many coaches, particularly those who have mainly experienced a "winning is everything" sport culture and/or ego-

involving climates in their sport careers, might benefit from exposure to these findings. Coaches who adopt a caring and task-involving climate might find their athletes to be more mindfully engaged, more coachable, and over time one might argue more likely to reach their athletic potential which, ironically, could be evident in greater normative success especially when athletic abilities are analogous.

In addition to considering the model, it is also of interest to note the athletes' reported mean scores on the scales. The task and caring climate scale scores, for example, were approximately four on a scale of 1-5, which indicates there is considerable room for enhancing these values. It is ideal to observe a greater discrepancy between the task and caring climate scores in comparison to the ego climate score, although in this study the values were relatively close, suggesting that coaches are likely sending messages reinforcing all aspects of the climate, rather than a strong united strategic plan that emphasizes caring and task-involving climate characteristics. Beyond the climate scores, the mindful engagement score also revealed room for enhancement, which could help athletes improve both their sport experience and performance.

A strength of this study is that it is the first to consider the relationship between sport environments and athletes' mindful engagement, but there are limitations that

should be noted. First, a variety of sports were included in this sample including team and individual sports, and although theoretically the model hypotheses would not differ across sports, it will be important to consider this possibility in future research. A second limitation is that the research design included a single data point, but clearly both the climate and athletes' mindful engagement is a dynamic process that could vary across a season. This study was unable to capture the complexity of a sport season that could include periods of more or less normative success, injuries to athletes, and variations in performances. Data collection at a single point in time provides a limited picture of athletes' experiences. It will be important in future research to include a mixed-method approach (e.g., semi-structured interviews; journals; enthnography) that includes athletes' descriptions of both the climate and their mindful engagement across a seasons or portions of it. It could be beneficial, as well, to explore the coaching behaviors that help athletes perceive a positive and supportive climate and be more mindfully engaged. Smith, Fry, Ethington, and Li (2005) adopted a similar approach in considering the coaching behaviors that proceed athletes' perceiving a task- and ego-involving study.

Another areas for future inquiry includes examining the link between athletes' goal orientations to their mindful engagement. Motivational climate is particularly

important because coaches have some control in creating a positive environment for athletes. However, Nicholls (1989) would argue that athletes high in task orientation, because of their focus on the process, would be more likely to experience mindful engagement. In turn, athlete's high in ego orientation, because their attention awareness is always on normative outcomes and comparison, would be more inclined to struggle with consistent mindful engagement in sport. Future research along these lines will be helpful in researchers developing a stronger understanding of how to foster mindful engagement among athletes.

AGPT and mindfulness research is in its infancy, and many unanswered questions arise when considering these concepts. For example, it will be interesting to examine how athletes' ability to be mindfully engaged in sport parallels their ability to display high daily mindfulness (e.g., when eating, walking, listening), using all senses and making a strong mind-body connection, and vise-versa. It is unknown the degree to which mindfulness skills transfer across activities and domains, and the role that the climate plays in these processes. Future work might consider, for example, athletes' ability to be mindfully engaged in sport as well as in the academic classroom, and the impact of the climate on these skills.

A final area for future research involves considering the potential to assist young children with developing strong mindfulness skills, which could help them thrive in both life and sport. A key may be helping children be introduced, practice, and learn these skills early (Orlick, 2000). In the physical domain, a clear conception of ability occurs around the age of 12 years (Fry, 2000; Fry & Duda, 1997). Taking this aspect into the account is important because athletes might respond differently when their coach gives feedback, depending on where they are developmentally. It may be that younger age groups demonstrate higher coachability (i.e., absorption) because they are most likely experiencing less embarrassment (especially in a caring/task-involving climate) due to their undifferentiated conceptions of ability. Larson, Hansen, and Moneta (2006) found that high school students who participated in sport were more likely to report taking initiative in their activities, setting goals, and sustaining effort over time, important skills for mastering mindful engagement. Continued research can shed light on how young athletes develop a strong ability to be mindfully engaged in a variety of circumstances.

In summary, this study provides a first step in exploring high school athletes' perceptions of the motivational climate on their sport team to their mindful engagement.

The door is open for more research that will assist coaches in helping young athletes optimize their sport experiences.

References

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. doi: http://dx.doi.org/10.1037/0022-3514.51.6.1173

Boyce, B. A., Gano-Overway, L. A., & Campbell, A. L. (2009). Perceived Motivational Climate's Influence on Goal Orientations, Perceived Competence, and Practice Strategies across the Athletic Season. *Journal of Applied Sport Psychology, 21*(4), 381-394.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822+.

Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J.-P. (2007). Mindfulness and Emotion Regulation: The Development and Initial Validation of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). *Journal of Psychopathology and Behavioral Assessment, 29*(3), 177-190. doi: 10.1007/s10862-006-9035-8

Fry, M. D. (2000). A developmental analysis of children's and adolescents' understanding of luck and ability in the physical domain.(Statistical Data Included). *Journal of Sport & Exercise Psychology*, *22*(2), 145.

Fry, M. D., & Duda, J. L. (1997). A developmental examination of children's understanding of effort and ability in the physical and academic domains. / Un examen developpemental de la comprehension de l ' effort et de l ' habilete dans le domaine des activites physiques par des enfants. *Research Quarterly for Exercise & Sport*, *68*(4), 331-344.

Fry, M. D., & Gano-Overway, L. A. (2010). Exploring the Contribution of the Caring Climate to the Youth Sport Experience. *Journal of Applied Sport Psychology*, *22*(3), 294-304.

Gano-Overway, L. A., & Ewing, M. E. (2004). A longitudinal perspective of the relationship between perceived motivational climate, goal orientations, and strategy use. *Research Quarterly for Exercise and Sport, 75*(3), 315(311).

Gano-Overway, L. A., Magyar, T. M., Mi-Sook, K., Newton, M., Fry, M. D., & Guivernau, M. R. (2009). Influence of Caring Youth Sport Contexts on Efficacy-Related Beliefs and Social Behaviors. *Developmental Psychology*, *45*(2), 329-340. doi: 10.1037/a0014067

Gould, D., Flett, R., & Lauer, L. (2012). The relationship between psychosocial developmental and the sports climate experienced by underserved youth. *Psychology of Sport and Exercise, 13*(1), 80-87. doi: 10.1016/j.psychsport.2011.07.005

Harwood, C. G., Keegan, R. J., Smith, J. M. J., & Raine, A. S. (2015). A systematic review of the intrapersonal correlates of motivational climate perceptions in sport and physical activity. *Psychology of Sport and Exercise, 18*(0), 9-25. doi: http://dx.doi.org/10.1016/j.psychsport.2014.11.005

Hogue, C. M., Fry, M. D., Fry, A. C., & Pressman, S. D. (2013). The Influence of a Motivational Climate Intervention on Participants' Salivary Cortisol and Psychological Responses. *Journal of Sport & Exercise Psychology, 35*(1), 85-97.

Iwasaki, S., & Fry, M. D. (2013). The Efforts of Sport Psychology Professionals to Assist Sport Administrators in Evaluating Youth Sport Programs. *Sport Psychologist, 27*(4), 360-371.

Kabat-Zinn, J. (2003). Mindfulness-Based Interventions in Context: Past, Present, and Future. *Clinical Psychology: Science and Practice, 10*(2), 144-156. doi: 10.1093/clipsy.bpg016

Kaufman, K. A., Glass, C. R., & Arnkoff, D. B. (2009). Evaluation of Mindful Sport Performance Enhancement (MSPE): A New Approach to Promote Flow in Athletes. *Journal of Clinical Sport Psychology*, *3*(4), 334-356.

Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). *Data analysis in social psychology*. *The handbook of social psychology* (4th ed.. ed. Vol. 1). Boston : New York: Boston : McGraw-Hill

New York : Distributed exclusively by Oxford University Press.

Larson, R. W., Hansen, D. M., & Moneta, G. (2006). Differing profiles of developmental experiences across types of organized youth activities. *Developmental Psychology, 42*(5), 849-863. doi: 10.1037/0012-1649.42.5.849

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To Parcel or Not to Parcel: Exploring the Question, Weighing the Merits. *Structural Equation Modeling: A Multidisciplinary Journal*, *9*(2), 151-173. doi: 10.1207/S15328007SEM0902_1

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, *7*(1), 83-104. doi: http://dx.doi.org/10.1037/1082-989X.7.1.83

MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence Limits for the Indirect Effect: Distribution of the Product and Resampling Methods. *Multivariate Behavioral Research, 39*(1), 99-128. doi: 10.1207/s15327906mbr3901_4

Newton, M., Fry, M., Watson, D., Gano-Overway, L., Kim, M. S., Magyar, M., & Guivernau, M. (2007). Psychometric properties of the caring climate scale in a physical activity setting. *Revista de Psicología del Deporte, 16*(1), 67-84.

Newton, M., Watson, D., Gano-overway, L., Fry, M., Kim, M.-S., & Magyar, M. (2007). The Role of a Caring-Based Intervention in a Physical Activity Setting. *The Urban Review, 39*(3), 281.

Nicholls, J. G. (1989). The competitive ethos and democratic education. *Cambridge, MA, US: Harvard University Press.*

Orlick, T. (2000). *In pursuit of excellence : how to win in sport and life through mental training* (3rd ed.. ed.). Champaign, IL: Champaign, IL : Human Kinetics.

Pineau, T. R., Glass, C. R., Kaufman, K. A., & Bernal, D. R. (2014). Self- and Team-Efficacy Beliefs of Rowers and Their Relation to Mindfulness and Flow. *Journal of Clinical Sport Psychology, 8*(2), 142-158.

Seifriz, J. J., Duda, J. L., & Likang, C. (1992). The Relationship of Perceived Motivational Climate to Intrinsic Motivation and Beliefs About Success in Basketball. *Journal of Sport & Exercise Psychology*, *14*(4), 375-391.

Smith, R. E., & Christensen, D. S. (1995). Psychological Skills as Predictors of Performance and Survival in Professional Baseball. *Journal of Sport & Exercise Psychology, 17*(4), 399-415.

Smith, R. E., & Smoll, F. L. (1995). Development and Validation of a Multidimensional Measure of Sport-Specific Psychological Skills: The Athletic Coping Skills Inventory-28. *Journal of Sport & Exercise Psychology, 17*(4), 379-398.

Smith, S. L., Fry, M. D., Ethington, C. A., & Li, Y. (2005). The Effect of Female Athletes' Perceptions of Their Coaches' Behaviors on Their Perceptions of the Motivational Climate. *Journal of Applied Sport Psychology, 17*(2), 170-177. doi: 10.1080/10413200590932470

Appendices

Figure 1.*Mediation SEM Model between Perceived Motivational Climate to Coachability and Future Desire by Mindful Engagement*

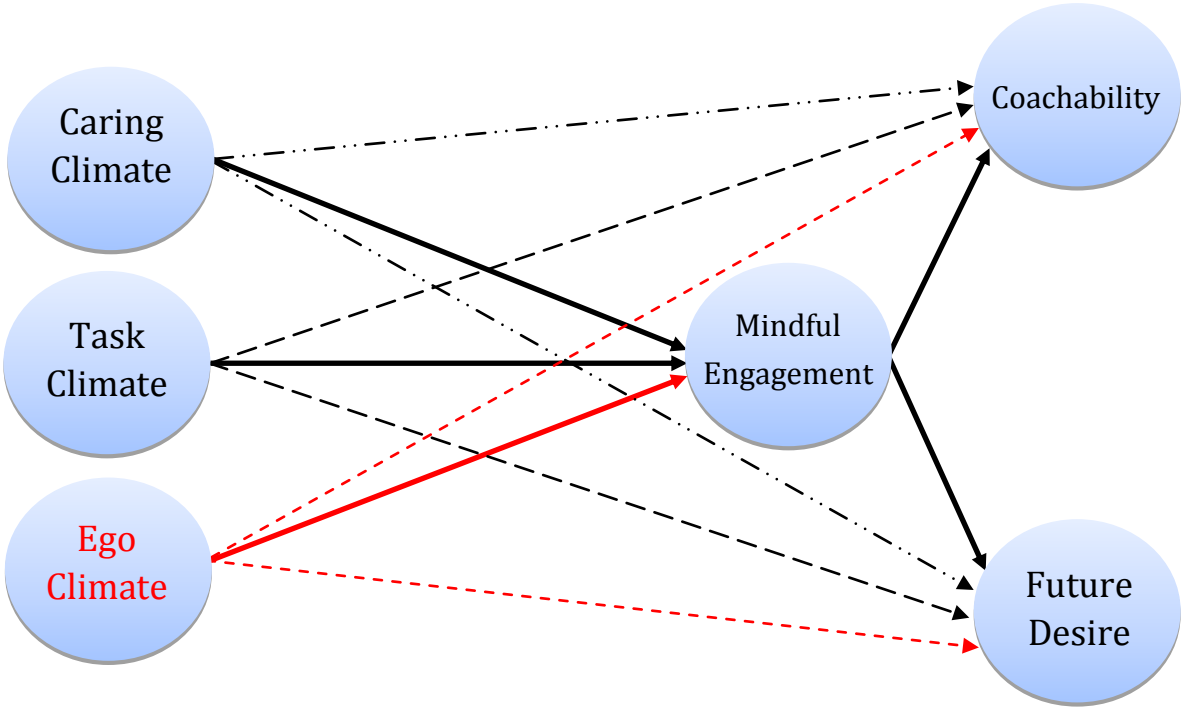
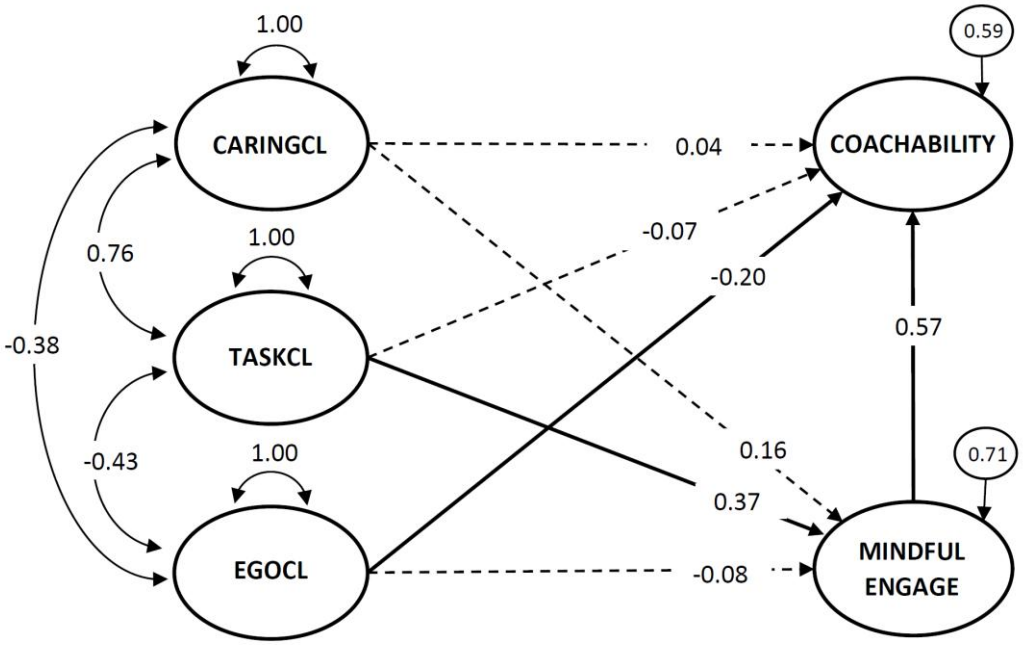


Figure 2. *Path model of latent variables with standardized coefficients for the final model.*



*Presented each correlation and standardized path coefficients among latent variables were estimated with ML in Mplus. Solid one way arrow lines represent significant regression coefficients and double head arrow lines represent significant correlation coefficients.

Table1. *Descriptive statistics, reliabilities, and correlation coefficients for all the variables.*

	Basic Statistics					Correlations				
Variable	**Mean**	**SD**	**Min**	**Max**	**Alpha**	**1**	**2**	**3**	**4**	**5**
1. Caring Climate	4.11	.61	1.00	5.00	.92					
2. Task-Involving Climate	3.97	.52	2.22	5.00	.73	.76				
3. Ego-Involving Climate	3.48	.64	1.75	4.92	.82	-.36	-.42			
4. Mindful Engagement	3.67	.48	1.83	4.75	.74	.47	.52	-.30		
5. Coachability	4.15	.69	2.25	5.00	.73	.34	.35	-.35	.62	
6. Future Desire to Participate	4.49	.79	1.67	5.00	.87	.37	.33	-.36	.19	.28

*All correlation coefficients were significant ($p < .05$)

Table 2. *Standardized estimates, standard errors, and confidence intervals for the final path model.*

	Standardized Estimate	S.E.	95% BC-CI*	
			Lower CI	Upper CI
CARING CLIMATE → MINDFUL (a1)	0.16	0.16	-0.12	0.25
TASK CLIMATE → MINDFUL (a2)	0.37	0.18	0.00	0.36
EGO CLIMATE → MINDFUL (a3)	-0.08	0.11	-0.13	0.07
CARING CLIMATE → COACHABILITY	0.04	0.15	-0.16	0.25
TASK CLIMATE → COACHABILITY	-0.07	0.18	-0.38	0.18
EGO CLIMATE → COACHABILITY	-0.20	0.10	-0.32	0.00
MINDFUL → COACHABILITY (b1)	0.57	0.11	0.34	1.46

*95% Bias Corrected Confidence Intervals (BC-CI) were calculated. When both lower and upper bounds do not contain 0, the (mediation) effect is significant.

Table 3. *Unstandardized mediation estimates and confidence intervals.*

Mediation Parameters	Estimate (Unstandardized)	95% BC-CI	
		Lower CI	Upper CI
a1*b1	0.06	-0.11	0.22
a2*b1	0.13*	0.01	0.42
a3*b1	-0.03	-0.13	0.04

Questionnaire for Study 1.

Directions: Read each statement and think about what it's like to play on your sport team. Choose the answer for each item that best describes what you think.

On this team…

		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	athletes are treated with respect.	1	2	3	4	5
2	the coaches respect athletes.	1	2	3	4	5
3	the coaches are kind to athletes.	1	2	3	4	5
4	the coaches care about athletes.	1	2	3	4	5
5	athletes feel that they are treated fairly.	1	2	3	4	5
6	the coaches try to help athletes.	1	2	3	4	5
7	the coaches want to get to know all the athletes.	1	2	3	4	5
8	the coaches listen to athletes.	1	2	3	4	5
9	everyone likes athletes for who they are.	1	2	3	4	5
10	the coaches accept athletes for who they are.	1	2	3	4	5
11	athletes feel comfortable.	1	2	3	4	5
12	athletes feel safe.	1	2	3	4	5
13	athletes feel welcome every day.	1	2	3	4	5

Directions: Read each statement and think about what it's like to play on your sport team. Choose the answer for each item that best describes what you think.

On this team…

		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	athletes feel good when they do better than their teammates.	1	2	3	4	5
2	trying hard is rewarded.	1	2	3	4	5
3	athletes are punished for mistakes.	1	2	3	4	5
4	the coaches focus on skill improvement.	1	2	3	4	5
5	athletes are taken out for mistakes.	1	2	3	4	5
6	each athlete's improvement is important.	1	2	3	4	5
7	out-playing teammates is important.	1	2	3	4	5
8	athletes try to learn new skills.	1	2	3	4	5

	On this team… 	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
9	coaches pay most of their attention to "the stars".	1	2	3	4	5
10	athletes are encouraged to work on their weaknesses.	1	2	3	4	5
11	doing better than others is important.	1	2	3	4	5
12	the coaches want athletes to try new skills.	1	2	3	4	5
13	the coaches favor some athletes over others.	1	2	3	4	5
14	athletes like playing against good teams.	1	2	3	4	5
15	athletes are encouraged to outplay other teammates.	1	2	3	4	5
16	all athletes play an important role.	1	2	3	4	5
17	every athlete wants to be the high scorer.	1	2	3	4	5
18	all athletes get to play in the games.	1	2	3	4	5
19	only the top athletes "get noticed".	1	2	3	4	5
20	athletes are afraid to make mistakes.	1	2	3	4	5
21	only a few athletes can be the "stars".	1	2	3	4	5

Directions: People have a variety of ways of relating to their thoughts and feelings. For each of the items below, rate how much each of these ways applies to you in your sport team.  **On this team...**		Not at all	Rarely	Sometimes	Often	Almost always
1	It is easy for me to concentrate on what I am doing.	1	2	3	4	5
2	I am preoccupied by the future.	1	2	3	4	5
3	I can tolerate emotional pain.	1	2	3	4	5
4	I can accept things I cannot change.	1	2	3	4	5
5	I can usually describe how I feel at the moment in considerable detail.	1	2	3	4	5
6	I am easily distracted.	1	2	3	4	5
7	I am preoccupied by the past.	1	2	3	4	5
8	It's easy for me to keep track of my thoughts and feelings.	1	2	3	4	5
9	I try to notice my thoughts without judging them.	1	2	3	4	5
10	I am able to accept the thoughts and feelings I have.	1	2	3	4	5
11	I am able to focus on the present moment.	1	2	3	4	5
12	I am able to pay close attention to one thing for a long period of time.	1	2	3	4	5

Directions: A number of statements that athletes have used to describe their experiences are given below. Please read each statement carefully and then recall as accurately as possible how often you experience the same thing on your basketball team.		Almost never	Rarely	Sometimes	Often	Almost always
1	When a coach tells me how to correct a mistake I've made, I tend to take it personally and feel upset.	1	2	3	4	5
2	When a coach criticizes me, I become upset rather than helped.	1	2	3	4	5
3	If a coach criticizes or yells at me, I correct the mistake without getting upset about it.	1	2	3	4	5
4	I improve my skills by listening carefully to advice and instruction from coaches.	1	2	3	4	5

Think about how much you would like to be in your sport program again next year (if you will not be able to continue for some reason, please answer these by thinking about if you could.).		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I want to be on this team again next season.	1	2	3	4	5
2	I am looking forward to being on this team next season.	1	2	3	4	5
3	I don't want to be on this team next season.	1	2	3	4	5

1) How many years have you been playing basketball?

_____

2) How many years have you played basketball in high school?

_____

3) What other sports do you play for your high school?

_____

4) Age: _____

5) Gender: Male Female Prefer not to respond

6) Years in High School: Freshman Sophomore Junior Senior

7) Team: C team JV team Varsity team

8) Which of the following is your race? (circle all that apply)

* White *Black or African American *Asian

*Hispanic/Latino *Native American or Pacific Islander

*American Indian or Alaskan Native *Other

Study 2

High School Female Athletes' Perceived Motivational Climate, Goal Orientation, Mindful Engagement in Sport

Susumu Iwasaki

05/15/2015

High School Female Athletes' Perceived Motivational Climate, Goal Orientation, Mindful Engagement in Sport

Research in sport employing achievement goal perspective theory (AGPT: Nicholls, 1989) has consistently revealed that athletes' goal orientations as well as their perceptions of the motivational climate on their sport teams are associated with their adaptive cognitive, affective and behavioral responses (Roberts & Treasure, 2012). Recently, Mccarthy (2011) revealed that college athletes' task goal orientation was associated with their mindful awareness, with regard to their ability to be engaged and fully attentive in their current activity. Research has also revealed that athletes high in task orientation are more likely to engage in optimal learning practices, perhaps due to their mindful engagement in sport. (Boyce, Gano-Overway, & Campbell, 2009; Gano-Overway & Ewing, 2004; Lochbaum & Roberts, 1993). To date researchers have not considered how high school female student athletes' goal orientation in their sport and perceptions of the caring/task-involving (C/TI) climate on their sport teams may impact their mindful sport engagement, and in turn their coping and strategic practice skills. The purpose of this study was to examine the relationship between female adolescent athletes' goal orientations and their perceptions of the motivational climate to their mindful sport engagement and other motivational features.

Nicholls' AGPT suggests that when individuals are task-involved, each individual can be equally and optimally motivated in achievement situations such as sport. Whether individuals are task or ego-involved in a particular activity can be influenced by their goal orientations and perceptions of the motivational climate. Nicholls devoted years to examining the developmental stages of his theory with school-age adolescents and found one significant and predictive distinction in individuals' perspectives, which he defined as task and ego goal perspectives, respectively. With the case of a task goal perspective, individuals' view their competence in a self-referenced manner and are focused on giving their personal best effort, improving on the tasks at hand, and cooperating with their peers. When individuals have a high ego goal perspective they are focused on social comparison in evaluating their experience, and judging their competence based on their normative standing. These two goal perspectives are influenced by both individuals' goal orientations and their perceptions of the motivational climate.

Nicholls defines goal orientations as individuals' personal definitions of success. Individuals high in task orientation define their personal success based on their effort, personal improvement, and cooperative manner in a goal striving context, while individuals high in ego orientation define success based on their normative standing and

their ability to demonstrate superiority over others. Nicholls and other AGPT researchers (e.g., Duda, 2000; Roberts et al., 1996) have noted the orthogonality of these two orientations, so that individuals can be high or low on both task and ego orientation or any high-low combination. A task orientation has consistently been linked to more adaptive responses such as positive affect, persistence, learning and competitive strategies, and intrinsic enjoyment (Biddle, Wang, Kavussanu, & Spray, 2003; Roberts & Treasure, 2012).

Previous studies have also found a positive relationship between athletes' task goal orientation and their optimal practice strategy use (Boyce et al., 2009; Lochbaum & Roberts, 1993). This finding follows since individuals with high task orientation are focused on aspects they have more control over such as their effort and improvement, and this sets the stage for them to be focused on those strategies that will help them continue to experience success.

In addition to goal orientations, Nicholls described how individuals' perceptions of the motivational climate on their teams also play an important role impacting whether they are task- or ego-involved. According to AGPT, individuals can perceive the motivational climate in a specific setting such as on a sport team as more or less task- or ego-involving, and the climate is induced by both the athletes' and the coaches'

behavior (Duda & Balaguer, 2007). In a task-involving climate, individuals perceive the focus is on exerting their best personal effort, enhancing their skills, and engaging in collaborative learning with their peers. In contrast, the emphasis in an ego-involving climate is on individuals' ability and performance outcomes. Further, mistakes are typically punished and rivalry among teammates is encouraged. Generally, these two motivational climates are moderately and negatively correlated (e.g., Walling, Duda, & Chi, 1993). Previous studies have revealed that individuals' perceptions of a task-involving climate were positively associated with their intrinsic motivation (Goudas & Biddle, 1994; Newton, Duda, & Yin, 2000; Scott, Ken, & Lynn, 2003; Seifriz, Duda, & Likang, 1992), team satisfaction (Newton et al., 2000; Walling et al., 1993), commitment (Olympiou, Jowett, & Duda, 2008) and optimal practice strategy use (Boyce et al., 2009; Gano-Overway & Ewing, 2004). A task-involving climate has also been negatively associated with performance anxiety (Newton et al., 2000; Smith, Cumming, & Smoll, 2008; Smith, Smoll, & Cumming, 2007). Across these studies, individuals' perceptions of an ego-involving climate have been negatively or not correlated to the described positive outcomes.

In addition to the task-involving climate, another supportive motivational climate that can be beneficial for female adolescent athletes is the caring climate. Newton et al.

(2007) defined the caring climate as one "that is interpersonally inviting, safe, supportive and capable of providing the experience of being valued and respected" (p.70). For the last decade, this caring climate has received much research attention. For example, Gould, Flett, and Lauer (2012) concluded that a coach-created C/TI motivational climate is associated with young athletes' positive social and personal development. Moreover, Fry and Gano-Overway (2010) found that young athletes who perceived a caring climate on their teams were more likely to report higher enjoyment and commitment, liked their coaches and teammates more, and engaged in more caring behaviors towards their coaches and teammates.

As described above, research on AGPT in sport has revealed numerous benefits to athletes reporting high task orientation and high perceptions of a C/TI climate. Another benefit, not yet explored, may be a potential connection from a task orientation and perceptions of a C/TI climate to mindful engagement in sport. Kabat-Zinn (2002) defined mindfulness as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (p. 145). A growing interest in mindful engagement has been evident in the sport psychology literature over the past decade. Gardner and Moore (2012) carefully describe the research efforts that have emerged in sport psychology

with regard to the relationship between mindfulness interventions and athletic performance. They describe the strides that have been made in highlighting the links between mindfulness to higher flow states, lower anxiety, and greater cognitive function and athletic performance (Gardner & Moore, 2012). For example, Gooding and Gardner (2009) found that for Division I men's basketball players (i.e., who had no prior meditation experience), their engagement in daily mindful attention training mediated the relationship between their practice free throw percentage and game free throw percentage. In addition Aherne, Moran, and Lonsdale (2011) reported that Irish college athletes significantly increased their "Clear Goals" and "Sense of Control" (subscales of Flow State Scale-2) after six weeks of mindfulness training.

Interestingly, the majority of mindfulness research has been conducted with college and/or elite athletes. Research, however, has not examined mindful engagement in adolescent athletes. It may be that participating in C/TI climates serves as an antecedent in laying the foundation to encourage athletes to focus on those factors they have control over such as effort and improvement that leads to more mindful engagement. The AGPT and caring framework clearly have mindful components. Noddings (2003) suggests that for genuine caring to occur, individuals must be nonjudgemental and personally desire the best for others in the group. For young athletes, being in a caring

sport environment, then, may allow them to know that their best effort is all that anyone could expect, and that regardless of the outcome, they remain valued and supported by coaches and teammates. Such an environment allows young athletes to focus on the moment (i.e., be mindfully engaged), with less concern about outcomes.

It follows, as well, that having a strong task orientation would likely help young athletes be mindfully engaged in sport. Defining success based on personal effort and improvement might free an athlete to focus on those aspects of sport that are guided by the moment (e.g., important cues; the next action) rather than worry and feel concern about making errors, disappointing others, and not performing well. If athletes were to experience more negative concentration disruption, they would likely find it problematic to be mindfully engaged. McCarthy (2011) provided partial support for this premise, finding that athletes high in task orientation were more actively engaged in the moment.

As described above, research has not considered whether athletes' perceptions of the climate and their goal orientations influence their mindful engagement in sport. The purpose of this study was to examine the relationship between high school female student athletes' perceptions of the motivational climate (C/TI, and ego-involving) on their sport teams and their goal orientations (task and ego orientation) to their

mindfulness, peaking under pressure, and practice strategy. For the basic correlation model of this study, high school female student athletes' perceptions of a C/TI climate and their task orientations were hypothesized to be positively associated with their mindfulness, peaking under pressure, and practice strategy use. In contrast, athletes' perceptions of an ego-involving climate and their ego goal orientation were expected to be negatively correlated to their mindfulness, peaking under pressure, and practice strategy use. Further, SEM analyses were employed to test two models: 1. The first examined whether female adolescents' ego goal orientation and their mindful engagement, are moderated by their task goal orientation (see Figure 1); The second model examined whether female adolescents' mindful engagement mediates the relationships between their perceptions of the C/TI climate and their task goal orientation to their self-evaluations of optimal practice strategy use and peaking under pressure (see Figure 2).

Method

Participants

Female high school soccer athletes from twelve teams (N = 190, $Mage$ = 15.59, SD = 1.15), who were participating in a college showcase tournament completed a survey for this study. All surveys were completed after the athletes' first or second game in the

showcase. The athletes were Caucasian (90%), Hispanic or Latino (4%), African American (3%), and a small percentage represented another race/ethnicity or were bi-racial. The athletes indicated they had been playing soccer 11.26 years, and had played soccer for their high school for 1.03 years. In addition, 61.6% of the girls reported playing no other sport for their high school besides soccer. The athletes competed on the varsity (46.3%), junior varsity (6.3%), C team (1%), and 44.2% of the athletes had not had tryouts for their high school team yet so did not know to which team they would be assigned. Parental information and athlete assent were obtained. The permission for this study was approved by the Human Subjects Committee at the researcher's university.

Measures

Caring Climate Scale (CCS). High school female soccer athletes responded to the 13-item CCS (Newton et al., 2007) to assess their perceptions of the degree to which athletes feel respected, supported, welcomed, psychologically protected (feel safe), and accepted both by coaches and teammates. Sample items are "On this team the coaches want to get to know all the athletes" and "On this team, the coaches accept athletes for who they are." Previous studies have found reliable internal consistency of this scale (Fry & Gano-Overway, 2010; Gano-Overway et al., 2009; Gould et al., 2012; Newton et al., 2007).

Perceived Motivational Climate (PMCSQ). The 21-item PMCSQ (Seifriz et al., 1992) was employed to measure high school female soccer athletes' perceptions of the motivational climate on their sport teams. The PMCSQ includes a task-involving and ego-involving climate scale, respectively. The items from the task-involving climate assess the degree to which individuals perceive the climate emphasizes individuals' effort, improvement, fair interaction with teammates and coaches, and encouragement for their cooperative learning manner. The items measuring an ego-involving climate taps the degree that rivalry is fostered among players, more skilled athletes receive the majority of the praise and recognition, and mistakes are typically punished. Sample questions are "On this team, the coaches believe that all of us are crucial to the success of the team" (task), and "On this team, the coaches give most of their attention to the stars" (ego). Previous research (e.g., Newton & Duda, 1999; Seifriz et al., 1992; Walling et al., 1993) has demonstrated strong internal consistency for the scales.

Task and Ego Orientation in Sport Questionnaire (TEOSQ). The 13-item TEOSQ (Duda & Nicholls, 1992) was utilized to measure individual differences in personal definitions of success in soccer. The task orientation scale items assess the extent that individuals define success in soccer based on their personal effort, improvement, and mastery of skills. The ego orientation items refer to a definition of

success based on normative comparison and outcomes (e.g., winning). Sample items are "I feel most successful on this team when… "I do my very best" (task), and "I'm the best" (ego). Previous studies have supported the psychometric properties of the TEOSQ (Duda, Chi, Newton, Walling, & Catley, 1995; Duda, Olson, & Templin, 1991; Goudas, Biddle, & Fox, 1994).

Cognitive and Affective Mindfulness Scale – Revised (CAMS-R). The 12-item CAMS-R (Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007) assesses the extent to which individuals are mindful during daily activities. For the purposes of this study, the measure has been adapted to refer specifically to athletes' sport experience on their team. This scale has originally been used for assessing individuals' evaluation of their mindfulness in feelings and thoughts on a daily basis, but the focus here is on high school female soccer athletes' mindful engagement in their sport. The stem for the items was modified from "People have a variety of ways of relating to their thoughts and feelings. For each of the items below, rate how much each of these ways applies to you." to read, "On this team…" Sample items are "I am able to focus on the present moment" and "I am able to accept the thoughts and feelings I have." Feldman et al. (2007) found sufficient Cronbach's alpha reliability ($\alpha = 0.74$ and 0.77).

Practice Strategy Use Questionnaire (PSUQ). The 7-item PSUQ (Boyce et al., 2009) assessed athletes' choice of strategy use for their overall improvement in soccer skills related to voluntary practice outside of their soccer field, goal setting, attentional focus, effort regulation, incorporating instructional feedback from coaches, imagery and self-talk. A sample item is "When I am practicing, I try to relate my skills to how I might perform in a competition," Internal consistency ($\alpha = 0.75$ and 0.72) of this scale was confirmed by Boyce et al. (2009).

Peaking Under Pressure (PUP). The PUP subscale of the Athletic Coping Skills Inventory – 28 (Smith & Smoll, 1995) was employed to measure athletes' perceptions of their ability to perform well under pressure. A sample item is, "I tend to play better under pressure because I think more clearly." Smith and Smoll (1995) reported an acceptable Cronbach alpha reliability coefficient ($\alpha = 0.78$) for the PUP.

Statistical Analyses

Confirmatory Factor Analysis (CFA) was employed to validate each factor structure (caring, task-, ego-involving climate; task and ego orientation; mindful engagement; practice strategy use; and peaking under pressure) simultaneously. Based on the results of CFA, manifest variables were parceled (combined, three per parcel) into latent variables (Little, Cunningham, Shahar, & Widaman, 2002). Descriptive

statistics (means, standard deviations, minimum, maximum and Cronbach's alpha reliability coefficients) were computed for each psychological construct. Next, two Structural Equation Models (SEM) were tested. The first hypothesized model examined whether task orientation moderates the relationship between ego orientation and mindful engagement. A second hypothesized model examined whether mindful engagement mediates the relationship between the three independent variables: caring, task-involving climate, and task orientation, to two dependent variables: optimal practice strategy use and peaking under pressure.

Results

Confirmatory Factor Analysis and Parceling

The results of CFA supported the underlying factor structure of the scales used in this study, without parceling. When 0.30 factor loading cutoff criterion (Hoyle, 2000) was applied, the following items were excluded from further analyses: ego-involving climate question 17 "every athlete wants to be the high scorer.", CAMS-R question 6 "I am easily distracted.", and practice strategy use question 7 "I talk to myself during soccer practice to help me do better."

The model fit was not acceptable based on the fit indices, likely because of the large number of items in the constructs. Therefore, we parceled the items following

Little and colleagues' recommendations (2002). These researchers argue that parceling results in fewer parameters in the model, lower indicator-to-sample size ratio, less likelihood of correlated residuals and cross factor loadings, as well as reduced sampling error. Furthermore, parceling will not change the overall constructs and hypothesized relationships within the model.

Specifically, three parcels were formed for each latent variable by following the rule that an item with the highest factor loading is combined with an item with the lowest. This rule is recommended by Little et al. (2002) to achieve balanced parcels. These parceled items had significant loadings (0.54 to 0.88) on the latent variables. (The details of these preliminary analyses are available by request to the first author.)

Descriptive Statistics and Correlations

The average scale scores revealed that the soccer athletes had high perceptions of a C/TI climate on their sport teams and they also reported a high task orientation in soccer (above 4.30 out of 5 point scale). Their self-reported mindful engagement, practice strategy use, and peaking under pressure were approximately 3.50. Their perceptions of the ego-involving climate on their sport team and their ego orientation in soccer were neutral: 3.00. The reliabilities of the scales were satisfactory, ranging from

0.65 – 0.90. Correlation analysis provided support for all the hypothesized relationships in this study. The descriptive statistics, Cronbach's alpha reliability coefficients, and the correlation coefficients are presented in Table 1.

Mediation Analysis

First, the hypothesized moderation model with latent variables was tested (Schoemann, 2010), to determine whether task orientation moderates the negative impact of ego orientation on mindful engagement. Results revealed that task goal orientation had a significant effect on mindful engagement ($R^2 = 0.383$, $p = 0.002$). Both ego goal orientation and the produced interaction latent variable of task and ego goal orientations were not significant.

Second, the mediation model was examined to determine whether mindful engagement mediates the relationship between the independent variables (caring, task-, and ego-involving climate) to the dependent variables (i.e., practice strategy use and peaking under pressure). The initial results indicated two reasons why there might exist a better alternative. One is that there was no sign of a significant connection from mindful engagement to practice strategy use. Another is that practice strategy demonstrated a very strong effect on peaking under pressure, which theoretically and practically makes sense. Therefore, we proposed a double mediation model whereby

two mediators (mindful engagement and practice strategy use) strengthen the relationship between three independent variables (caring, task-involving, and task goal orientation) and one dependent variable (peaking under pressure). The results of this final model (see the Figure 3) revealed significant mediation paths after controlling for the rest of the direct and indirect effects in the model: 1. caring climate → (+) mindful engagement → (+) peaking under pressure; 2. task goal orientation → (+) mindful engagement → (+) peaking under pressure; 3. caring climate → (-) practice strategy use (*see note) → (+) peaking under pressure; 4. task-involving climate → (+) practice strategy use → (+) peaking under pressure; and 5. task goal orientation → (+) practice strategy use → (+) peaking under pressure. The fit indices are presented in Table 2 and were deemed to be satisfactory. (*Note: A possible suppressor was found between caring climate and practice strategy use after controlling for the effects of task-involving climate and task orientation to practice strategy use).

Discussion

The purpose of this study was to extend previous research examining the relationship between high school athletes' perceptions of the motivational climate and their mindful engagement in sport, by including the potential influence of goal orientation. Specifically, the influence of goal orientations and perceptions of the

climate were considered on mindful engagement as well as two positive outcomes (i.e., peaking under pressure and optimal strategy use).

To begin, the moderation analysis examining goal orientation and mindful engagement revealed that task orientation, alone, had a significant positive effect on mindful engagement. Although it was hypothesized that ego orientation would have a negative effect on mindful engagement, no relationship was found between the two, and in turn, the interaction term of goal orientations also had no significant effect. These results indicate that a task orientation may be key in helping high school female athletes be mindfully engaged on their sport teams. If adolescent girls are gauging their success based on their effort and improvement (i.e., controllable factors), it follows that they may be more focused on the relevant cues of the moment (e.g., finding an open teammate, aware of the location of opponents) and less distracted by negative incidents (e.g., mistakes; opponents scoring a goal) that occur during practices and competitions. Focusing on controllable factors may help these athletes avoid maladaptive responses, such as performance anxiety, in their sport and is an important area for future research. It may be, too, that the link from task orientation to mindful engagement helps facilitate a circular loop whereby the focus on controllable factors (i.e., task orientation) leads to being in the moment, which leads to continued focus on effort and improvement as

important aspects of success. McCarthy (2011) found that task orientation was associated with a component of daily mindfulness (i.e., action with awareness), which adds support to the circular loop that task orientation may be the key component influencing mindful engagement in both sport and life.

Why ego orientation had no significant effect on mindful engagement is unclear. It may be necessary in future work to consider perceived ability in addition to ego orientation as trained athletes high in ego orientation may be better able to manage distractions (e.g., mistakes) if they are high performers, than those athletes high in ego orientation who demonstrate lower perceived ability. These athletes might struggle to be mindfully engaged on their sport teams if they are demonstrating low levels of competence. Mccarthy (2011) also found no relationship between ego orientation and daily mindfulness, so it may be the relationship is more complex than with task orientation.

With regard to the initial mediation analysis, we hypothesized that a C/TI involving climate and task orientation would have a positive indirect relationship on both optimal practice strategies and peaking under pressure through mindful engagement. With the initial model, no relationship emerged between mindful engagement to practice strategy use. After careful consideration of the model structure,

it was clear that mindful engagement and practice strategy use were contributing to peaking under pressure so the decision was made to test a double mediation model, which proved significant. Final results suggest that mindful engagement in sport mediates the relationship between athletes' task orientation and perceptions of a caring climate on their sport team to their ability to peak under pressure.

This study was the first to explore these relationships in sport, and it is interesting that the caring climate emerged as the strongest construct that had a significant direct effect on mindful engagement for this sample of female athletes. The social features of the environment have been identified as particularly critical for females, and while Noddings (2003) would maintain that a caring climate is crucial for both males and females, it may be that the relationship component of sport teams (i.e., feeling welcome, being treated with kindness and respect) is the most important aspect in helping females be more connected to each moment. It will be important to examine if this is also the case for adolescent males over time. Since it is more process-focused, one might argue that perceptions of a task-involving climate should be the more critical for assisting athletes to be present in the moment, but it may be that caring is at the foundation of all positive outcomes. Noddings, for example, wrote that without a sense of feeling cared for, young people may struggle with developing a passion for learning

and a zest for life, which could thwart their hope, opportunities to learn, and performance outcomes (Noddings, 2005).

In addition to the link between motivational climate to mindful engagement, the mediation results also revealed that both high school female soccer athletes' mindful engagement and use of optimal practice strategies significantly mediated the relationship between their perceptions of a positive climate (i.e., C/TI climate) and task orientation to their self-evaluated ability to peak at clutch times. Interestingly, perceptions of a task-involving climate and task orientation led to more optimal practice strategy use when the mediator (mindful engagement) was absent, even though simple correlation analysis indicated a significant relationship between mindful engagement and practice strategy use. Future research may shed further light on the relationships between these variables. For example, if athletes had more formal mental skills training such as in goal setting, imagery, and self-talk, the relationship between mindful engagement and optimal practice strategy use might be stronger. The practice strategy measure has athletes indicate the frequency with which they work on mental skills such as goal setting and positive emotional regulation. Important considerations for future research would be to determine not just if athletes report using these strategies (i.e., mental skills) but their skill and effectiveness in employing these strategies and which

skills are more helpful for peaking under pressure. It is possible, too, that some of the strategies moreso than others, considered separately, might be associated with mindful engagement in sport, and thus peaking under pressure.

Coaches place high value on athletes developing the ability to play their best under pressure, and it is reasonable that both optimal strategy use and mindful engagement are important aspects for high achievers. Optimal strategy use measure includes items that assess basic mental skills that are specific to their sport (e.g., imagery, self talk, receptiveness for coach's feedback and goal setting), but also activities outside of the sport context, such as practicing yoga and/or meditation. However, the practice strategy use questionnaire only includes items regarding athletes' mental skills within a sport-specific context. Athletes who engage in these outside sport strategies (e.g., yoga, meditation) may reflect a stronger relationship between their practice strategies and ability to be mindfully engaged in their sport. Clearly, more work is needed to develop an assessment of all possible practice strategies (both sport-specific and outside sport strategies) and their link to mindful engagement. An avenue for future inquiry will be to examine whether practice strategy use and mindful engagement independently or interactively contribute to athletes' perceptions of their ability to perform well under pressure.

Clearly, when reflecting on the implications of this study it is important to note that the mediation model is complex. In some cases the individual variable correlations may have had significant values, yet when the multivariate model is introduced, some of the relationships were lost. This may be because when the independent variables are correlated, as was the case with the climate scales in this model, the significant path coefficients might differ from the results of simple correlation/regression analysis. This occurs because the model is a snapshot of the simultaneous relationships among variables (Kline, 2005). Future research should examine if this model will be appropriate with different ages, ethnic groups, sports, and skill levels.

The typical way to enhance mindfulness is to have athletes participate in mindfulness-based training. These results suggest that a natural bi-product of creating a positive and supportive climate in youth sport may be enhancing athletes' ability to become more engaged in their sport practices and competitions. This approach compliments the work of Canadian sport psychology professional, Terry Orlick (2000), who has written extensively about how children can learn early in life various mental skills that set them up to achieve excellence. He maintains that individuals at any age and level can enhance and maintain their excellence, and this process includes an ability to be focusing on the moment and peaking under pressure.

Despite the important findings revealed in this study, there were limitations. First, the data collection occurred at one time point, and potential important changes that might have occurred, for example, across the season in athletes' perceptions of the motivational climate and their mindful engagement were not captured. In addition, the context was unique, in that these female athletes were participating in a showcase where they compete in front of multiple college coaches who are looking for college recruits. Some athletes might have been more concerned with their personal performance rather than the teams', because of these circumstances, although high school athletes on travel teams likely grow accustomed to competing in venues where college coaches may be observing. Results cannot be generalized to male athletes, or to female athletes who do not share the characteristics of the athletes in this sample and/or whom play in situations unlike this college showcase.

Avenues for future research are multiple, and likely include mixed-methods designs. Future research might, for example, include coaches' evaluations of their athletes' ability to peak under pressure and their quantified personal records (e.g., time and length records for cross country and track and field) as evidence of athletes' performance under clutch conditions.

In summary, this unique study revealed that a C/TI climate and task-orientation seems to facilitate athletes' mindful engagement and their enhanced practice strategy use in sport, which in turn influenced their ability to peak under pressure. These findings add to the body of sport psychology literature that affirms the benefits of a positive social psychological environment for athletes. Future research should continue this exploration into mindful engagement and motivational climate and its positive outcomes.

References

Aherne, C., Moran, A. P., & Lonsdale, C. (2011). The Effect of Mindfulness Training on Athletes' Flow: An Initial Investigation. *Sport Psychologist, 25*(2), 177-189.

Biddle, S. J. H., Wang, C. K. J., Kavussanu, M., & Spray, C. M. (2003). Correlates of Achievement Goal Orientations in Physical Activity: A Systematic Review of Research. *European Journal of Sport Science, 3*(5), 1-20.

Boyce, B. A., Gano-Overway, L. A., & Campbell, A. L. (2009). Perceived Motivational Climate's Influence on Goal Orientations, Perceived Competence, and Practice Strategies across the Athletic Season. *Journal of Applied Sport Psychology, 21*(4), 381-394.

Duda, J. L. (2000). *Advances in Sport and Exercise Psychology Measurement 2nd*: Fitness Information Technology.

Duda, J. L., & Balaguer, I. (2007). *Coach-Created Motivational Climate*. Champaign, IL, US: Human Kinetics.

Duda, J. L., Chi, L. K., Newton, M. L., Walling, M. D., & Catley, D. (1995). TASK AND EGO ORIENTATION AND INTRINSIC MOTIVATION IN SPORT. *International Journal of Sport Psychology, 26*(1), 40-63.

Duda, J. L., & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology, 84*(3), 290+.

Duda, J. L., Olson, L. K., & Templin, T. J. (1991). The relationship of task and ego orientation to sportsmanship attitudes and the perceived legitimacy of injurious acts. . *Research Quarterly for Exercise & Sport, 62*(1), 79-87.

Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J.-P. (2007). Mindfulness and Emotion Regulation: The Development and Initial Validation of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). *Journal of Psychopathology and Behavioral Assessment, 29*(3), 177-190. doi: 10.1007/s10862-006-9035-8

Fry, M. D., & Gano-Overway, L. A. (2010). Exploring the Contribution of the Caring Climate to the Youth Sport Experience. *Journal of Applied Sport Psychology, 22*(3), 294-304.

Gano-Overway, L. A., & Ewing, M. E. (2004). A longitudinal perspective of the relationship between perceived motivational climate, goal orientations, and strategy use. *Research Quarterly for Exercise and Sport, 75*(3), 315(311).

Gano-Overway, L. A., Magyar, T. M., Mi-Sook, K., Newton, M., Fry, M. D., & Guivernau, M. R. (2009). Influence of Caring Youth Sport Contexts on

Efficacy-Related Beliefs and Social Behaviors. *Developmental Psychology, 45*(2), 329-340. doi: 10.1037/a0014067

Gardner, F. L., & Moore, Z. E. (2012). Mindfulness and Acceptance Models in Sport Psychology: A Decade of Basic and Applied Scientific Advancements. *Canadian Psychology, 53*(4), 309-318. doi: 10.1037/a0030220

Gooding, A., & Gardner, F. L. (2009). An Investigation of the Relationship Between Mindfulness, Preshot Routine, and Basketball Free Throw Percentage. *Journal of Clinical Sport Psychology, 3*(4), 303-319.

Goudas, M., & Biddle, S. (1994). PERCEIVED MOTIVATIONAL CLIMATE AND INTRINSIC MOTIVATION IN SCHOOL PHYSICAL-EDUCATION CLASSES. *European Journal of Psychology of Education, 9*(3), 241-250.

Goudas, M., Biddle, S., & Fox, K. (1994). Achievement Goal Orientations and Intrinsic Motivation in Physical Fitness Testing With Children. *Pediatric Exercise Science, 6*(2), 159-167.

Gould, D., Flett, R., & Lauer, L. (2012). The relationship between psychosocial developmental and the sports climate experienced by underserved youth. *Psychology of Sport and Exercise, 13*(1), 80-87. doi: 10.1016/j.psychsport.2011.07.005

Hoyle, R. H. (2000). *Confirmatory factor analysis.* . San Diego, Calif.: San Diego, Calif. : Academic.

Kabat-Zinn, J. (2002). Commentary on Majumdar et al.: Mindfulness Meditation for Health. *Journal of Alternative & Complementary Medicine, 8*(6), 731-735. doi: 10.1089/10755530260511739

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.. ed.). New York: New York : Guilford Press.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To Parcel or Not to Parcel: Exploring the Question, Weighing the Merits. *Structural Equation Modeling: A Multidisciplinary Journal, 9*(2), 151-173. doi: 10.1207/S15328007SEM0902_1

Lochbaum, M. R., & Roberts, G. C. (1993). Goal orientations and perceptions of the sport experience. / Fixation des objectifs et perception de l ' experience sportive. *Journal of Sport & Exercise Psychology, 15*(2), 160-171.

McCarthy, J. J. (2011). Exploring the Relationship Between Goal Achievement Orientation and Mindfulness in Collegiate Athletics. *Journal of Clinical Sport Psychology, 5*(1), 44-57.

Newton, M., & Duda, J. L. (1999). The interaction of motivational climate, dispositional goal orientations and perceived ability in predicting indices of motivation. *International Journal of Sport Psychology, 30*(1), 63-82.

Newton, M., Duda, J. L., & Yin, Z. (2000). Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire - 2 in a sample of female athletes. *Journal of Sports Sciences, 18*(4), 275-290. doi: 10.1080/026404100365018

Newton, M., Fry, M., Watson, D., Gano-Overway, L., Kim, M. S., Magyar, M., & Guivernau, M. (2007). Psychometric properties of the caring climate scale in a physical activity setting. *Revista de Psicología del Deporte, 16*(1), 67-84.

Nicholls, J. G. (1989). The competitive ethos and democratic education. *Cambridge, MA, US: Harvard University Press.*

Noddings, N. (2003). *Happiness and Education*. New York, NY, US: Cambridge University Press.

Noddings, N. (2005). Identifying and responding to needs in education. *Cambridge Journal of Education, 35*(2), 147-159. doi: 10.1080/03057640500146757

Olympiou, A., Jowett, S., & Duda, J. L. (2008). The Psychological Interface Between the Coach-Created Motivational Climate and the Coach-Athlete Relationship in Team Sports. *Sport Psychologist, 22*(4), 423-438.

Orlick, T. (2000). *In pursuit of excellence : how to win in sport and life through mental training* (3rd ed.. ed.). Champaign, IL: Champaign, IL : Human Kinetics.

Roberts, G. C., & Treasure, D. C. (2012). *Advances in motivation in sport and exercise* (3rd ed.. ed.). Champaign, IL: Champaign, IL : Human Kinetics.

Roberts, G. C., Treasure, D. C., Kavussanu, M., Roberts, G. C., Treasure, D. C., & Kavussanu, M. (1996). Orthogonality of achievement goals and its relationship to beliefs about success and satisfaction in sport. *Sport Psychol., 10*(4), 398-408.

Schoemann, A. M. (2010). KUant Guides: Latent Variable Moderation. http://crmda.dept.ku.edu/resources/kuantguides/16_LatentVariableModeration.pdf

Scott, C., Ken, H., & Lynn, K. (2003). Intrinsic motivation in youth sport: Goal orientations and motivational climate. *Journal of Physical Education New Zealand, 36*(1), 15.

Seifriz, J. J., Duda, J. L., & Likang, C. (1992). The Relationship of Perceived Motivational Climate to Intrinsic Motivation and Beliefs About Success in Basketball. *Journal of Sport & Exercise Psychology*, *14*(4), 375-391.

Smith, R. E., Cumming, S. P., & Smoll, F. L. (2008). Development and Validation of the Motivational Climate Scale for Youth Sports. *Journal of Applied Sport Psychology, 20*(1), 116-136. doi: 10.1080/10413200701790558

Smith, R. E., & Smoll, F. L. (1995). Development and Validation of a Multidimensional Measure of Sport-Specific Psychological Skills: The Athletic Coping Skills Inventory-28. *Journal of Sport & Exercise Psychology, 17*(4), 379-398.

Smith, R. E., Smoll, F. L., & Cumming, S. P. (2007). Effects of a Motivational Climate Intervention for Coaches on Young Athletes' Sport Performance Anxiety. *Journal of Sport & Exercise Psychology*, *29*(1), 39-59.

Walling, M. D., Duda, J. L., & Chi, L. (1993). The Perceived Motivational Climate in Sport Questionnaire: construct and predictive validity. . *Journal of Sport & Exercise Psychology*, *15*(2), 172-183.

Appendices

Figure 1. *Proposed negative relationship between ego orientation and mindful engagement moderated by task orientation*

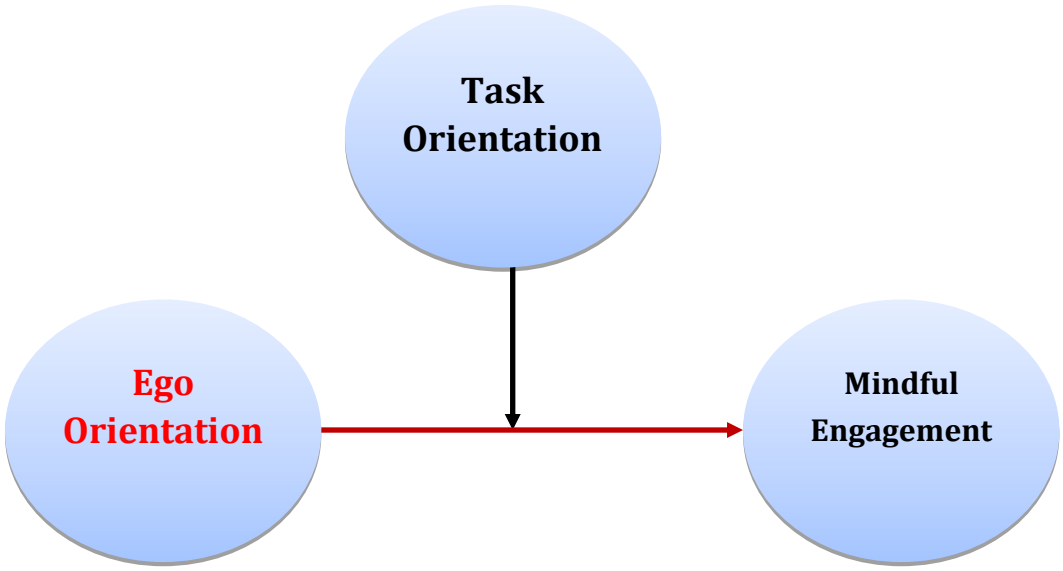


Figure 2. *Proposed Mediation SEM Model between selected positive indicators C/TI and Task Orientation to Practice Strategy Use and Peaking under Pressure by Mindful Engagement*

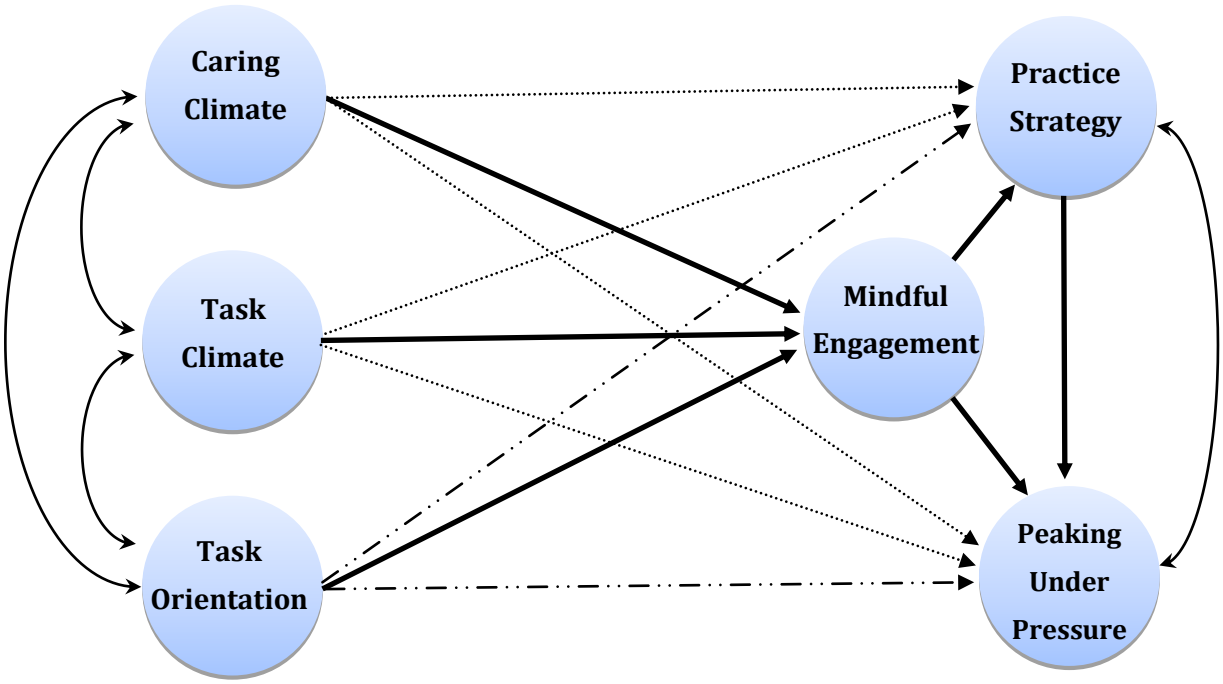
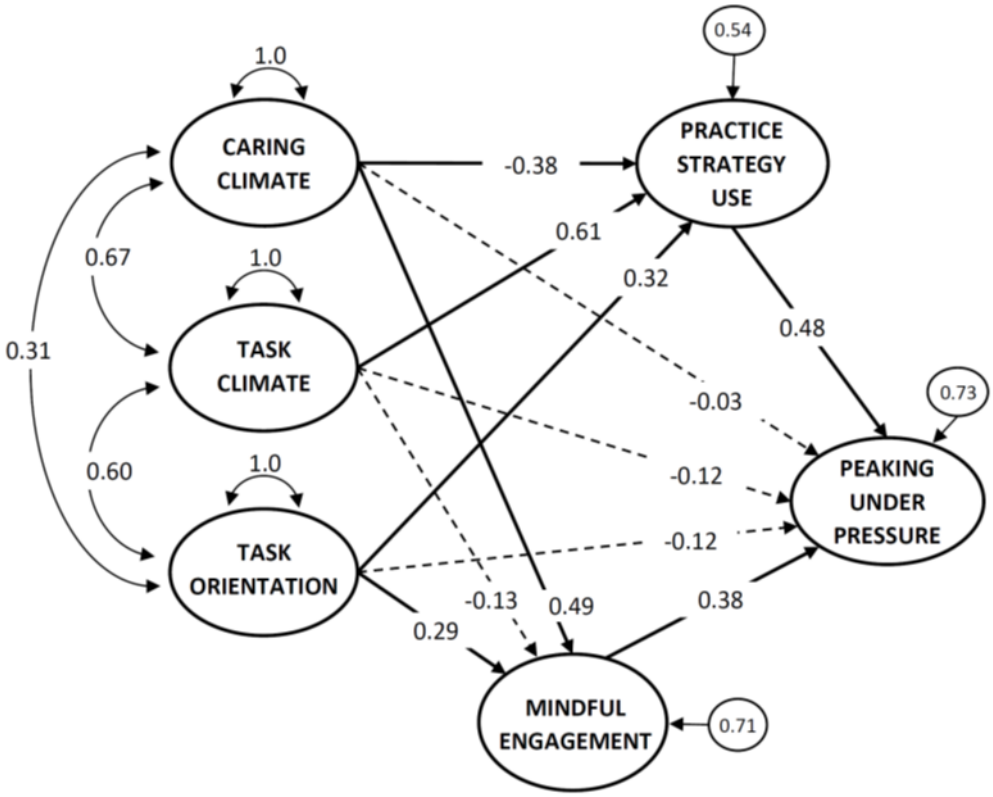


Figure 3. *Path model of latent variables with standardized coefficients for the final model.*



(chi-square/df = 209.42/138, RMSEA = 0.05, CFI = 0.96, TLI = 0.94, and SRMR = 0.05)

Table 1. *Descriptive statistics for all the variables.*

	Basic Statistics					Correlations						
Variable	**Mean**	**SD**	**Min**	**Max**	**Alpha**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. Caring Climate	4.50	.48	2.92	5.00	.90							
2. Task-Involving Climate	4.42	.43	3.00	5.00	.72	.67						
3. Ego-Involving Climate	2.97	.71	2.41	3.60	.83	-.55	-..34					
4. Task Orientation	4.31	.56	1.14	5.00	.81	.31	.60	-.20				
5. Ego Orientation	3.11	.89	1.17	5.00	.82	-.19	-.13	.39	.03			
6. Mindful Engagement	3.85	.48	2.50	5.00	.72	.49	.35	-.20	.36	-.00		
7. Practice Strategy Use	3.97	.52	2.43	5.00	.65	.13	.55	.01	.57	-.04	.21	
8. Peaking Under Pressure	3.49	.83	1.25	5.00	.82	.10	.19	-.16	.20	-.02	.35	.41

*All correlation coefficients above |.19| were significant ($p < .05$).

Table 2. *Standardized estimates, standard errors, and confidence intervals for the final path model.*

	Standardized Estimate	S.E.	95% BC-CI	
			Lower CI	Upper CI
CARING CLIMATE → MINDFUL (a1)	0.49	0.12	0.19	1.06
TASK CLIMATE → MINDFUL (a2)	-0.13	0.17	-0.86	0.31
TASK ORIENTATION → MINDFUL (a3)	0.29	0.12	-0.02	0.85
CARING CLIMATE → STRATEGY (a4)	-0.38	0.13	-1.30	-0.09
TASK CLIMATE → STRATEGY (a5)	0.61	0.16	0.23	1.91
TASK ORIENTATION → STRATEGY (a6)	0.32	0.11	0.02	0.79
CARING CLIMATE → PEAKING	-0.03	0.16	-0.44	0.53
TASK CLIMATE → PEAKING	-0.12	0.21	-0.92	0.50
TASK ORIENTATION → PEAKING	-0.12	0.13	-0.56	0.17
MINDFUL → PEAKING (b1)	0.38	0.11	0.08	0.67
STRATEGY → PEAKING (b2)	0.48	0.14	0.11	0.70

Table 3. *Unstandardized mediation estimates and confidence intervals.*

Mediation Parameters	Estimate (Unstandardized)	95% BC-CI	
		Lower CI	Upper CI
a1*b1	0.21	0.05	0.56
a2*b1	-0.06	-0.42	0.12
a3*b1	0.13	0.00	0.45
a4*b2	-0.21	-0.61	-0.04
a5*b2	0.34	0.08	0.87
a6*b2	0.18	0.01	0.41

Questionnaire for Study 2.

Directions: Read each statement and think about what it's like to play on your sport team. Choose the answer for each item that best describes what you think.  **On this team…**		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	athletes are treated with respect.	1	2	3	4	5
2	the coaches respect athletes.	1	2	3	4	5
3	the coaches are kind to athletes.	1	2	3	4	5
4	the coaches care about athletes.	1	2	3	4	5
5	athletes feel that they are treated fairly.	1	2	3	4	5
6	the coaches try to help athletes.	1	2	3	4	5
7	the coaches want to get to know all the athletes.	1	2	3	4	5
8	the coaches listen to athletes.	1	2	3	4	5
9	everyone likes athletes for who they are.	1	2	3	4	5
10	the coaches accept athletes for who they are.	1	2	3	4	5
11	athletes feel comfortable.	1	2	3	4	5
12	athletes feel safe.	1	2	3	4	5
13	athletes feel welcome every day.	1	2	3	4	5

Directions: Read each statement and think about what it's like to play on your sport team. Choose the answer for each item that best describes what you think.  **On this team…**		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	athletes feel good when they do better than their teammates.	1	2	3	4	5
2	trying hard is rewarded.	1	2	3	4	5
3	athletes are punished for mistakes.	1	2	3	4	5
4	the coaches focus on skill improvement.	1	2	3	4	5
5	athletes are taken out for mistakes.	1	2	3	4	5
6	each athlete's improvement is important.	1	2	3	4	5
7	out-playing teammates is important.	1	2	3	4	5
8	athletes try to learn new skills.	1	2	3	4	5
9	coaches pay most of their attention to "the stars".	1	2	3	4	5

 **On this team…**		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
10	athletes are encouraged to work on their weaknesses.	1	2	3	4	5
11	doing better than others is important.	1	2	3	4	5
12	the coaches want athletes to try new skills.	1	2	3	4	5
13	the coaches favor some athletes over others.	1	2	3	4	5
14	athletes like playing against good teams.	1	2	3	4	5
15	athletes are encouraged to outplay other teammates.	1	2	3	4	5
16	all athletes play an important role.	1	2	3	4	5
17	every athlete wants to be the high scorer.	1	2	3	4	5
18	all athletes get to play in the games.	1	2	3	4	5
19	only the top athletes "get noticed".	1	2	3	4	5
20	athletes are afraid to make mistakes.	1	2	3	4	5
21	only a few athletes can be the "stars".	1	2	3	4	5

Directions: People have a variety of ways of relating to their thoughts and feelings. For each of the items below, rate how much each of these ways applies to you on your soccer team.  **On this team...**		Not at all	Rarely	Sometimes	Often	Almost always
1	It is easy for me to concentrate on what I am doing.	1	2	3	4	5
2	I am preoccupied by the future.	1	2	3	4	5
3	I can tolerate emotional pain.	1	2	3	4	5
4	I can accept things I cannot change.	1	2	3	4	5
5	I can usually describe how I feel at the moment in considerable detail.	1	2	3	4	5
6	I am easily distracted.	1	2	3	4	5
7	I am preoccupied by the past.	1	2	3	4	5
8	It's easy for me to keep track of my thoughts and feelings.	1	2	3	4	5
9	I try to notice my thoughts without judging them.	1	2	3	4	5
10	I am able to accept the thoughts and feelings I have.	1	2	3	4	5
11	I am able to focus on the present moment.	1	2	3	4	5
12	I am able to pay close attention to one thing for a long period of time.	1	2	3	4	5

Directions: Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. When do you feel most successful in your sport? In other words, when do you feel your sport has gone really well for you?  **I feel most successful in soccer when…**		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I am the only one who can do a skill.	1	2	3	4	5
2	I learn a new skill and it makes me want to practice more.	1	2	3	4	5
3	I can do better than other people.	1	2	3	4	5
4	Others can't do as well as me.	1	2	3	4	5
5	I learn something that is fun to do.	1	2	3	4	5
6	Others mess up and I don't.	1	2	3	4	5
7	I learn a new skill by trying hard.	1	2	3	4	5
8	I work really hard.	1	2	3	4	5
9	I have the best stats.	1	2	3	4	5
10	Something I learn makes me want to practice more.	1	2	3	4	5
11	I am the best.	1	2	3	4	5
12	A skill I learn really feels right.	1	2	3	4	5
13	I do my very best.	1	2	3	4	5
14	My teammates and I help each other do our best.	1	2	3	4	5
15	My teammates and I help each other improve.	1	2	3	4	5

Please read each of the following statements listed below and indicate how much you personally agree with each item by circling the appropriate response: 		Strongly Disagree	Disagree	Not Sure	Agree	Strongly agree
1	I often practice soccer on my own.	1	2	3	4	5
2	When I am practicing soccer, I take time to decide what I am supposed to focus on rather than just practicing.	1	2	3	4	5
3	When I am practicing soccer, I try to set goals for myself.	1	2	3	4	5
4	When I am practicing soccer, I try to use my coach's feedback to make my skills better.	1	2	3	4	5
5	When I am practicing soccer, I try to relate my skills to how I might perform in a competition.	1	2	3	4	5
6	I practice soccer skills and techniques in my mind before making new attempts.	1	2	3	4	5
7	I talk to myself during soccer practice to help me do better.	1	2	3	4	5

Directions: A number of statements that athletes have used to describe their experiences are given below. Please read each statement carefully and then recall as accurately as possible how often you experience the same thing on your soccer team. 		Almost never	Rarely	Sometimes	Often	Almost always
1	I tend to play better under pressure because I think more clearly.	1	2	3	4	5
2	The more pressure there is during a game, the more I enjoy it.	1	2	3	4	5
3	To me, pressure situations are challenges that I welcome.	1	2	3	4	5
4	I make fewer mistakes when the pressure's on because I concentrate better.	1	2	3	4	5

1) How many years have you been playing soccer?

_____

2) How many years have you played soccer in high school?

_____

3) What other sports do you play for your high school?

_____

4) Age: _____

5) Gender: *Male *Female *Prefer not to respond

6) Years in High School: *Freshman *Sophomore *Junior *Senior

7) Team (if you play soccer on your high school team):

*C team *JV team *Varsity team

8) Which of the following is your race? (circle all that apply)

* White *Black or African American *Asian

*Hispanic/Latino *Native American or Pacific Islander

*American Indian or Alaskan Native *Other

1

2

Extended Literature Review

Sport psychology research examining the motivational climate in youth sport has revealed that young athletes' perceptions of the motivational climate influence their cognitive, affective, and behavioral motivational responses. Coaches can benefit from assessing their young athletes' perceptions of the motivational climate. For example, uncaring and unfair coaching behaviors such as not calling young athletes by name, not making sport fun, and praising only a few stars within teams can lead to a maladaptive motivational climate which sport psychology research has observed simultaneously diminishes young athletes' positive experiences. Coaching excellence can be enhanced if coaches understand the scientific evidence that sport psychology studies have revealed so far, and will continue to do in the future, and engage in behaviors that help create a positive and supportive sport environment.

In youth sport today, dropout due to an overly competitive environment is a huge problem despite participation in sport being so popular. Even though competitive sport contexts exist, youth sport administrators can create maximal psychological environments for their young athletes. Youth sport practices shouldn't be too harsh on youngsters because they are under development in the knowledge of sport and exercise and are undergoing mental and physical development. Thus, youth sport cultures need

to be task-involving and caring, and encourage continued participation. Nevertheless, overall sport experiences should be focused by coaches and should focus youth sport experiences on encouraging individuals' skill acquisition, improvement, effort, and enjoyment through the activity.

Achievement Goal Perspective Theory (AGPT)

Nicholls (1984, 1989) developed the Achievement Goal Perspective Theory (AGPT) to explain how all individuals could attain optimal motivation. According to Nicholls, individuals' perceptions of the climate play a key role in their motivation. Specifically, Nicholls indicated that individuals could perceive two different climates in achievement situations: task- and ego-involving. In a task-involving climate, athletes perceive that their coaches emphasize each individual's effort and improvement, foster cooperation among team members, and teach them that mistakes are part of the learning process. In contrast, in an ego-involving climate, athletes perceive that their coaches place the greatest value on their ability and performance outcomes. In addition, coaches who create ego-involving climates believe that rivalry among teammates will bring out the best in athletes, and send the message that mistakes should be punished. In an ego-involving climate, it is less likely that young athletes are able to enjoy sport and show their best effort through the activity. Nicholls (1989) hypothesized these two climates

would be moderately negatively correlated, depending on the strength of each climate, because the characteristics of each climate are in contrast to each other.

The AGPT suggests that the focus on generating and pursuing tasks rather than merely competing against others is beneficial for sport administrators and young athletes. For instance, a competition generates a winner and a loser based on a score board. This is the nature of competition. The consequences of such competitions, however, only temporally categorize winners and losers. Youth sport administrators need to focus on the process leading up to competitions, because the categorization of winners and losers will not help youth athletes to learn something more important from their experiences. Achieving goals is more meaningful than just considering wins or losses. Results across multiple domains are in line with consistent evidence that a task-involving climate is a superior predictor to an ego-involving climate of young athletes' positive psychological status.

In the sport domain, the first perceived motivational climate study sampled high school basketball players (Seifriz, Duda, & Likang, 1992) and revealed that a mastery-oriented climate was associated with positive outcomes such as perceived enjoyment and effort. Contrarily, a performance-oriented climate correlated with the belief that greater ability breeds success.

Moreover, recent studies have revealed further associations with a task-involving climate for youth. For instance, Bortoli, Bertollo, Comani, and Robazza (2011) utilized the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2) and a psychobiosocial questionnaire (positive aspects of emotion, cognition, motivation, movement, performance, and communication) as part of the questionnaires used to measure the individuals' perceptions of the motivational climate and important associations with a sample of Italian youths aged 13-14 years (160 boys and girls belonged to individual or team sports from youth sport organizations in northeast Italy). A mastery climate (task-involving climate) was associated with a pleasant psychobiosocial status (r = .21) but negatively correlated to a performance climate (r = -.33, two-tailed p<.001), whereas a performance climate had no association with a pleasant psychobiosocial status. In addition, Gutiérrez, Ruiz, and López (2010) employed 2189 Spanish adolescent subjects aged 13 to 17 years from PE class to complete the Spanish versions of the motivational climate survey (EPCM: the Spanish translated version of the L'Echelle de Perception du Climat Motivational Scale). This measure assesses the pupils' degree of worry about mistakes, perceived comparison promoted by peers and teachers, emphasis on noting progress by pupils, and the teachers' ability to promote learning, the Spanish translated version of Strategies to

Sustain Discipline Scale (SSDS) examines how the teacher tries to maintain his/her discipline by means of intrinsic, introjected, and external motivation. Also measured was the teachers' indifference to maintain discipline, and the IMI (four subscales: Interest/Enjoyment, Effort/Importance, Perceived Competence, and Tension/Pressure). As the AGPT predicts, pursuit of progress by pupils and promotion of learning by teachers (task-involving climate) sufficiently result in the pupils' perceived enjoyment and much effort in PE class.

In a youth sport specific study, Cumming, Smoll, Smith, and Grossbard (2007) investigated a total of 268 male and female youth basketball players aged 10 to 15 years and employed the Motivational Climate Scale for Youth Sports (Smith, Cumming, & Smoll, 2008), attitudinal scales relating to their sport enjoyment, and their evaluations of their coach. They utilized these measurements to examine whether the youngsters' perception of the motivational climate was associated with their enjoyment, coaching evaluation, and winning ratio. The mastery climate was positively associated with enjoyment (r = .40), and the ego climate was negatively correlated (r = .21). These significant correlation coefficients along with findings from other sport research suggest that perceptions of a task-involving climate can foster youth athletes' sport enjoyment. More recent youth sport psychology studies provide consistent indication that an ego-

involving climate possibly induces youngsters' problematic motivational responses such as less enjoyment (Macdonald, Côté, Eys, & Deakin, 2011) and effort (Gao & Newton, 2009). Further, these relationships have been reported with athletes in a variety of cultures including many countries and varied sport samples (Bortoli et al., 2011; Gutiérrez et al., 2010; Weiss, Amorose, & Wilko, 2009).

Sport administrators might benefit from finding out how their participants perceive the motivational climate within their programs. A number of climate measures in sport have been developed for this purpose. The Perceived Motivational Climate in Sport Questionnaire (PMCSQ; Seifriz et al., 1992) was the first climate measure introduced in the literature. It was later extended to become the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2; Newton, Duda, & Yin, 2000). Other measures include the Motivational Climate Scale for Youth Sports (MCSYS; Smith et al., 2008) and Learning and Performance Oriented Physical Education Climate Questionnaire (LAPOPEQ; Papaioannou, Marsh, & Theodorakis, 2004). In sum, task-involving climate questions measure whether individuals perceived a focus on effort and improvement. Contrarily, ego-involving climate questions assess the degree that athletes are focused on more inter-personal comparison, feel they are treated unequally, and feel that only athletes who outperform others get the coaches' attention.

Ommundsen, Roberts, and Kavussaun (1999) investigated the relationships among psychological factors such as perceived motivational climate, achievement goal orientations, satisfaction, source of satisfaction, achievement strategies, purposes of team sport, and conceptions of ability for Norwegian university students enrolled in sport and physical education classes. Results revealed that perceptions of a performance-oriented climate were positively associated with ego orientation, while perceptions of a task-involving climate positively correlated with adaptive emotions and cognition. These findings are in line with previous studies (Balaguer, Duda, & Crespo, 1999; Gano-Overway, 2001; Sarrazin, Guillet, & Cury, 2001; Vazou, 2010), and are analyzed by quantitative methods.

Ommundsen et al. (1999) pointed out that these types of statistical significances are worthy of mention, although there is room to increase sample sizes in order to acquire more statistical power and to assess individual demographic information to consider how it possibly relates to the hypothesized relationships among constructs. Additionally, qualitative data analyses may be needed to account for what athletes are experiencing with regard to AGPT. In addition to research linking climate to higher enjoyment, intention of future involvement, and effort (Cumming et al., 2007; Newton, Watson, Kim, & Beacham, 2006), research has also revealed that a task-involving

climate created by coaches is capable of suppressing youth athletes' performance anxiety (Smith, Smoll, & Cumming, 2007). High anxiety levels are hazardous, especially with regard to young athletes' sport participation levels. Overall, a task-involving climate conveys many positive by-products.

Goal Orientation and Perceived Motivational Climate

The AGPT (Nicholls, 1984, 1989) suggests individuals can be high and/or low in task and ego orientation. In this distinction, the relationship between task and ego orientation is orthogonal (Nicholls, 1989). Even though these orientations are dispositional (i.e., they refer to individuals' self-defined success), studies in sport psychology have revealed these two orientations are influenced by the perceived motivational climate (Gano-Overway & Ewing, 2004; Smith, Smoll, & Cumming, 2009). Noteworthy, Gano-Overway and Ewing (2004) reported that perceptions of task orientation can increase when physical education students are in a task-involving climate over time. The task orientation group with the lowest scores at the beginning (3 data collections were conducted) significantly increased their task orientation as they consistently maintained a task-involving climate through the data collection period. This result is in accord with the view of Treasure and Roberts (1995) that individuals' goal orientations will shift towards the characteristics of the motivational climate that they have been involved in,

when these two (climate and orientation) are discrepant. Therefore, it is possible to change individuals' dispositional goal orientations in the right circumstances. This indicates that a significant factor in youth sport is contingent on a motivational climate that is desirably positive and created by each young athlete, parent, coach, and the community.

Caring Climate and Caring Behavior

Another aspect of the climate that has been considered in recent sport psychology research is the extent that individuals perceive the environment to be caring and supportive. Newton, Fry, et al. (2007) recently defined a caring climate as one where all individuals feel welcomed, invited, respected, safe, and accepted by both their peers and coaches. When individuals perceived a caring climate in an activity, they are more likely to indicate they would like to continue to participate in the program (Newton, Fry, et al., 2007). In addition, Fry and Gano-Overway (2010) found further associations with young athletes' perceptions of caring climate such as young athletes' reporting higher enjoyment, positive attitudes towards their teammates/coaches, commitment to their sport activity (soccer), and engaging in caring behaviors towards their teammates/coaches. Further evidence of caring climate as a significant motivational climate in the youth sport context has been found by Gould, Flett, and

Lauer (2012). They found a positive relationship between a caring climate and positive youth development outcomes. Specifically, they reported that young athletes' perceptions of a caring climate on their teams, was associated with them experiencing greater teamwork, social skills, and taking more initiative. The researchers suggested that these benefits may be especially important for underserved youth. In sum, youth sport administrators would do well to be familiar with this research and understand the potential sport has to promote positive youth development with their athletes.

Fostering young athletes' caring behaviors might be another key challenge for youth sport administrators. Fry and Gano-Overway (2010) adapted questions from the caring climate scale to measure individuals' perceptions of caring behavior toward their teammates and coaches with a sample of young athletes aged 10-17 years. They found that young athletes who perceived a high caring climate within their team were more likely to engage in caring behaviors toward their teammates and coaches. In other words, it seems the more coaches exhibit their respect, acceptance, caring, and attitude to listen to athletes, the more athletes commit to actualizing their caring behavior. This scientific evidence supports the notion that a caring and task-involving climate does combine to foster a positive motivational climate by both coaches and young athletes. Youth sport administrators can take advantage of the emphasis on fostering a caring climate so that

they can facilitate youngsters' caring behavior to support relatedness which possibly enhances young athletes' commitment to their future sport activity (Fry & Gano-Overway, 2010).

For the last decade, researchers in sport psychology have investigated the caring climate as a key factor in maximizing positive psychological environments in sport practices. As a significant concept of caring theory, Noddings reviewed her early experience when she was a very strict grader as a mathematics teacher (in the interview by Hatton, 2002). She retraced the fact that one student flunked her class due to her severe grading system. Even though she retained a rational grading system, she softened the strict grading system because she thought the strictness on grades was ineffective for helping her students to learn something more important than getting grades. Severe grading in academic subjects can create feelings of helplessness among students, and in a similar vein, sport administrators need to insure that feedback in sport in not so harsh that it results in deterred improvement. Even though the accuracy of test results and the happiness achieved through victories remain, the caring concept should be emphasized. Even though her concept of caring is more posited towards a personal approach such as face to face tutoring, caring related behavior and climate is a key to maximizing participants' motivation. Thus, the caring climate is defined as one where all individuals

feel welcomed, invited, respected, safe, and accepted by their peers and coaches (Newton, Fry, et al., 2007).

A well integrated caring climate and caring behaviors have been observed by students/athletes for a number of years. For instance, Larson and Silverman (2005) interviewed elementary and secondary school students in physical education class about their perceptions of their physical education teacher, and also observed physical education teachers' caring teaching. The researcher found that they identified caring teachers from their past that had a huge impact on their lives. More specifically, their investigation into physical education teachers' behavior in a school setting was coded and inductively analyzed using the 4 subjects' teaching behavior. They found that these teachers share similar beliefs and influences about the importance of a caring environment, a common interest in deepening their relationships with students, and an overall belief that physical education and activity can make a difference in the lives of the youths. The authors suggested more in-depth investigations are necessary in order to describe and understand caring teaching. Because the situation in physical education is unique in that teachers teach 30 students at a time and the students may have a wide range of skill and motivation levels, effective caring climates and caring teaching behaviors possibly vary from other sport and physical activity settings.

In a similar vein, Pensgaard and Roberts (2002) conducted in-depth interviews with 7 elite athletes about motivational climate from the view of "a coach matters." One category of the qualitative data in their study highlights how supportive and caring climates are key concepts even in a competitive sport world. This is understandable because competitive sports exhaust athletes' mental and physical capabilities. Newton, Watson, et al. (2007) investigated young athletes aged 9-17 belonging to two National Youth Sports Programs (NYSP.) They split the participants into a caring group (N = 90) with a caring –based intervention and the control group (N = 263) with their usual training program from NYSP. The data collected after the 5-week intervention reveals that the intervention group's caring climate, empathetic concern, and expected participation increased while their perception of an ego-involving motivational climate decreased. This study indicates that enhancing a caring climate is possible and beneficial on other positive psychological factors.

Gano-Overway et al. (2009) have also considered the wider umbrella of benefits that come with youngsters perceiving a caring climate. They reported a significant influence of perceived caring climate on prosocial and antisocial behavior through efficacy-related beliefs (i.e., positive and negative affective self-regulatory efficacy: ASRE) and empathic self-efficacy (ESE) in youth sport programs. Their results reveal

that young athletes' perceived caring climate was positively associated with ESE, positively, and negatively associated with ASRE. ESE was positively associated with ASRE and prosocial behaviors and positive ASRE was associated with negative ASRE. In summary, it appears that a caring climate may set the stage for important efficacy related beliefs.

Fry & Gano-Overway's (2010) investigation of young athletes belonging to a community soccer league (N = 184) explored the contribution of the caring climate to a variety of variables. They reported significant differences in that those young athletes who perceived a high caring climate with their teams tended to have higher levels of enjoyment, positive attitudes towards coaches/teammates, commitment to soccer, and caring behavior towards their coaches/teammates. Their findings are consistent with other studies (Newton, Watson, et al., 2007; Pensgaard & Roberts, 2002) and are ideal. However, not many quantitative studies from youth sport programs in terms of caring behavior and the climate have been conducted and published. In addition, few coaches and administrators for youth programs utilize such feedback from their participants. This sort of quantitative data can describe and review how the program was run by administrators and the participants' overall sport experience in the program. Therefore,

more research similar to Fry and Gano-Overway's (2010) is needed to better understand how to maximize young athletes' experiences in youth sport.

Self-Determination Theory and Intrinsic Motivation

This study employs three key theories/framework: caring framework, Achievement Goal Perspective Theory (AGPT), and Self-Determination Theory (SDT). Together these theories describe how to enhance a young athletes' positive sport experience. This next section provides a review of SDT. Ryan, Kuhl, and Deci (1997) describe self-determination as an endorsement of one's actions after careful thought, which creates the ability within the individual to pursue what is personally interesting, important, self-fulfilling, and vitalizing. Since Deci and Ryan first presented the SDT in 1980, researchers from several academic fields such as medicine, education, and physical activity domains have investigated the phenomenon with specific cohorts. In sport domains where people coach and learn, practitioners appreciate the benefit from SDT and attempt to maximize participants' adaptive motivational responses. For example, it is well known that discontinuous physical activity is a cause of multiple health-related problems all over the world such as occurs with lifestyle-related diseases like diabetes and obesity. Motivation is a possible moderator for behavior modification, and fosters the continuation of physical activity. Utilizing SDT to understand the

motivation structure in youth sport may be beneficial in order to maximize young athletes' activities.

The SDT framework provides a continuum of motivational viewpoints to understand athletes' and exercisers' experiences. Deci and Ryan (2008) maintain that individuals' motivation lies between autonomous and controlled motivation. Both types of motivation have unique qualities. Autonomous motivation refers to intrinsic motivation as well as levels of extrinsic motivation that are less controlling. Intrinsic motivation occurs when individuals value an activity and conform it to their identities. It drives individuals' rigorousness or justification to their actions. Contrarily, extrinsic motivation consists of two components: 1. external regulation presumes that individuals' motivation is externally controlled by things such as reward or punishment. 2. introjected regulation presumes that individuals' motivation is incompletely internalized and is sparked by things such as an approval motives, avoidance of shame, contingent self-esteem, and ego-involvement. As differentiated from these two stages of motivation that reinforce individuals toward an activity, individuals being unmotivated and apathetic towards an activity run short of purposefulness, intention, and motivation.

Intrinsic and extrinsic motivation are the primary types of motivation. Deci (1971) published the first study about intrinsic motivation. He wanted to examine

whether an extrinsic reward such as money can enhance a person's intrinsic motivation towards an activity. He found that giving extrinsic rewards does not seem to improve the participants' intrinsic motivation status. Intrinsic motivation which is theorized as the ultimate motivation for individuals' activity can be divided into three stages: knowledge, accomplishment, and stimulation (Deci & Ryan, 2000). Fostering and integrating these three factors into youth sport programs is a key challenge for youth sport administrators.

Examining the effects of intrinsic motivation (Deci, 1971; Deci, Betley, Kahle, Abrams, & Porac, 1981; Ryan, Mims, & Koestner, 1983; Weinberg, 1979) on children is popular topic among sport psychology educators and researchers. Deci et al. (1981) demonstrated the natural effects of intrinsic motivation under competitive and non-competitive conditions. The results highlight the difference in undergraduates' (40 male and female) intrinsic motivation under two artificial conditions of competition and non-competition. Both male and female participants' free-choice measured intrinsic motivation was lower under the competition condition than the non-competition condition. Interestingly, under the competition condition, male participants demonstrated higher intrinsic motivation than female participants. On the other hand, female participants expressed higher intrinsic motivation than males did under the non-

competition condition. These findings suggest possible gender and condition effects (i.e., levels of competition.) in intrinsic motivation depending on the preference for levels of competitiveness.

One measure that has been used extensively in sport is the Intrinsic Motivation Inventory (IMI) (Mcauley, Duncan, & Tammen, 1989), which is comprised of four subcategories: Interest/Enjoyment, Perceived competence, Effort/Importance and Tension/Pressure. It measures individuals' perception of situational elements of intrinsic motivation on site (but it does not measure individuals' trait intrinsic motivation in a specific sport: e.g., whenever I play basketball, I always enjoy it.). A practical goal for youth sport administrators could be enhancing young participants' perceptions of Interest/Enjoyment, Perceived Competence, and Effort /Importance, while lessening Tension/Pressure. Mcauley et al. (1989) validated the Intrinsic Motivation Inventory in a sport competitive setting (a basketball jump shooting competition). Their exploratory factor analysis indicated that the original 18 items might be deficient in terms of the questionnaire's internal consistency with a model of four first order factors and one second order factor, comparing to 16 items (two items were dropped by their insufficient factor loadings: below .4) in this sport specific setting. Their reliability coefficient for the subscales Tension/Pressure was low (under .70 which is a suggested

cut-off criterion). This subscale's instability is problematic because previous studies also failed to reveal a sufficient Cronbach's alpha coefficient in the Tension/Pressure scale. It is unclear why the subscale has problems sometimes. One possibility is that participants (question takers) are confused by the meaning of tension/pressure. (e.g., tension/pressure can be either good or bad depending on the amount; sometimes it is a good inducement to play well). It may be, too, that the reversal questions could be confusing for participants, especially for youngsters, although the other scales have reversal items that don't seem problematic. Thus, researchers (data collection teams) should pay attention to the psychometric properties of the Tension/Pressure scale.

Individuals' perception of the motivational climate in a sport activity have been shown to enhance their state of intrinsic motivation. Previous studies that investigated the relationship between perceived motivational climate and intrinsic motivation (Brunel, 1999; Goudas, 1998; Goudas, Biddle, & Fox, 1994; Newton et al., 2000; Scott, Ken, & Lynn, 2003; Seifriz et al., 1992), have confirmed a tenable degree of consistency that a task-involving climate correlates with intrinsic motivation positively. On the other hand, ego-involving climates often are associated with lower intrinsic motivation. For instance, Papaioannou et al. (2004) conducted a multilevel modeling statistical analysis for motivational climate in physical education and sport settings that

included 4,546 students (Time 1) and 4,390 students (Time 2) that represented a total of 200 classes taught by 67 teachers. They found a positive relationship between class-average task-involving climate and intrinsic motivation (effort and enjoyment) in physical education. Also, Jõesaar, Hein, and Hagger (2011) investigated associations of intrinsic motivation with a sample of 424 Estonian team sport athletes (*M* age = 13.19; *SD* = 1.56). The researchers investigated how peers can influence young athletes' need satisfaction, intrinsic motivation and persistence in sport within a 12- month period. A partial result reveals that the hypothesized structural equation modeling can explain that the effect of task-involving peer motivational climate on intrinsic motivation is mediated by the need satisfaction constructs of perceived autonomy, competence, and relatedness. In sum, youngsters' perceived motivational climate can affect their intrinsic motivation. Therefore, maintaining a task-involving climate is encouraged for youth sport administrators and is beneficial for young athletes' intrinsic motivation as it may serve as a catalyst for their life-long sport and exercise engagement.

Important Role of Coaches and Parents

Studies revealed that significant others: coaches (Duda & Balaguer, 2007), peers (Ntoumanis & Vazou, 2005; Ullrich-French & Smith, 2009), and parents (Burgess, 2009; L. Gershgoren, Tenenbaum, A. Gershgoren, & Eklund, 2011), can play an

important role in creating a positive motivational climate in youth sport. The Perceived Motivational Climate in Sport Questionnaire (PMCSQ) and the Caring Climate Scale (CCS) measure perceptions from both the coaches' and peers' created motivational climate. Even though it does not differentiate the coach- and peer-induced motivational climate, it does include both coach and peer induced motivational climate questions. While the measure was not designed to sort this information it might help when practitioners and researchers want to classify and evaluate a perceived motivational climate created by nominal groups to look at the coach and peer items separately. Vazou, Ntoumanis, and Duda (2006) modeled the study by differentiating between coach- and peer-induced motivational climates. Based on AGPT (Nicholls, 1984, 1989), perceptions of the motivational climate causes multiple patterns of cognition, affection, and behavior depending on the significant people that surround a person. So, the differentiation between coach- or peer-induced motivational climates can look at these two correlational characteristics with some aimed constructs. It is possible to see some discrepancies (uniqueness) between the coach-induced and peer-induced motivational climate. For instance, Vazou et al. (2006) identified that these two distinctions possibly play important roles in predicting their hypothesized dependent variables: physical self-worth, enjoyment, sport trait anxiety, and effort. The peer-induced task climate

significantly predicted physical self-worth (*b* = .20) and enjoyment (*b* = .32), whereas the coach-induced task climate significantly predicted enjoyment (*b* = .17 *smaller than peer's) and effort (*b* = .14). This difference might provide important information for sport administrators and sport psychologists, when it comes to developing and conducting optimal sport psychological interventions. In a similar manner, previous climate studies have shown a relationship between climate to sport performance anxiety (Smith et al., 2007; Walling, Duda, & Chi, 1993); specifically athletes' perceptions of sport trait anxiety were predicted by their perceptions of the coach-induced ego climate. Other interesting facts with the dependent variable prediction were that there is only one age effect on effort, while gender effects were apparent for all dependent variables predictions. This is, males demonstrated higher scores over females on every dependent variable except the sport trait anxiety. Thus, gender and age are possible aspects for sport administrators to consider and may elicit different responses.

In addition to the important role coaches and peers play, parents also play a significant role in young athletes' lives. Fry (2010) suggested getting parents to be the supporters of their young athletes is key to maximizing motivation Further, Daniels (2007) suggested the importance of cooperation from each child, parent, coach, and community for positive youth development in sport. Taken together, youth sport

administrators can take advantage of the results from previous studies in examining the important role coaches, peers, and parents play in order to lay out a positive psychological environment for their practices.

All in all, theories/frameworks (AGPT, Caring, SDT) and previous studies have provided beneficial information about perceptions of the motivational climate for sport administrators. Research consistently supports that a positive motivational climate is beneficial not only for young athletes' positive motivational responses such as enjoyment (Fry & Gano-Overway, 2010) and intrinsic motivation (Newton et al., 2006; Seifriz et al., 1992), but also for their caring behaviors (Fry & Gano-Overway, 2010). Moreover, young athletes' perception of a positive motivational climate seems to be associated with expected future involvement in sport (Newton, Watson, et al., 2007; Newton et al., 2006). Still a comparably new framework, the caring climate literature needs to expand and progress in a way similar to the AGPT grounded climate research, so that it can contribute to young athletes participating in high quality sport programs that foster their positive youth development.

Mindfulness Research

Over the last decade, research relating to mindfulness has increased, perhaps because of researchers' interest in issues related to stress in society e.g., in school and

sport. Mindfulness has been operationally defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment (Kabat-Zinn, 2003, p. 145)" When individuals are mindfully engaged, they are attentive to what is going on at that moment, and not distracted by thoughts about the past or the future. If thoughts that are distracting to being alert in the moment are noticed, individuals skilled in mindfulness are able to acknowledge those thoughts and table them so that they don't become the focus of the moment.

Measurement of Mindfulness

This review will highlight several of the mindfulness measures that are currently being used in research. The first to be described was developed by Brown and Ryan (2003) who noted the role that mindfulness could play in helping individuals regulate their behavior, and learn to disengage individuals from less adaptive patterns of thoughts and behaviors. The authors indicate that mindfulness captures a quality of consciousness that is characterized by clarity and vividness of current experience and functioning and thus stands in contrast to the mindless, less "awake" states of habitual or automatic functioning that may be chronic for many individuals. They further argue that the ability to be mindfully engaged should be closely related to well-being features,

since a heightened awareness in the moment may lead individuals to engage in healthier behaviors such as not overeating or ruminating, for example.

The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item measure designed to assess individuals' attention or lack of attention on what is occurring at the present moment. The MAAS items are focused simply on the presence or lack of attention and awareness, but do not focus on characteristics such as trust, gratitude and empathy. Sample items include, "I break or spill things because of carelessness, not paying attention, or thinking of something else", and "I find myself preoccupied with the future or the past." The MAAS has revealed acceptable psychometric properties. The initial development of the measure revealed that mindfulness, as hypothesized, was associated with individuals' adaptive psychological responses and life satisfaction. Interestingly, support was provided for the authors' assertion that mindfulness would be related to well-being. Specifically, they found positive associations of mindfulness with subjective vitality, anxiety, depression, positive/negative affect, and life satisfaction. In the development of the MAAS, the authors also included a mindfulness intervention with breast cancer patients and found that over the 8-week training period, their mindfulness went up along with their mood

scores, and their stress levels as measured by the Symptoms of Stress Inventory (SOSI) went down.

The MAAS has received widespread use in the psychology literature, and is particularly useful for getting a general sense of the degree that individuals perceive they can be aware and attentive to the moment. Shapiro, Oman, Thoresen, Plante, and Flinders (2008) showed mindfulness interventions can be effective in increasing mindfulness, and in turn, increased mindfulness is possibly helpful for maintaining individuals' psychological well-being. Moreover, international studies translated the MAAS and employed it to test hypotheses such as cross cultural equivalency and interrelations of mindfulness with emotional regulation, stress, and anxiety (e.g., Black, Sussman, Johnson, & Milam, 2012; Christopher, Charoensuk, Gilbert, Neary, & Pearce, 2009; Gregório & Pinto-Gouveia, 2013). Collectively, these studies suggest that training mindfulness can be a universal medicine for all individuals' optimal psychological state.

Another measure of mindfulness is the Cognitive and Affective Mindfulness Scale (CAMS; Kumar, 2005; Kumar, Feldman, & Hayes, 2005) that was revised (CAMS-R) by the authors in 2006. Developed by Feldman, Hays, Kumar, Greeson, and Larenceau (2007), the CAMS-R is a 12-item measure that includes four subscales assessing attention, present focus, awareness and acceptance, and a total scale score can

be calculated, as well. The MAAS focuses only on attention and awareness, while the CAMS-R is broader and inclusive of multiple dimensions that can be identified. While the factor structure of the scales was adequate in the authors' study describing the development of the measure, the subscale reliabilities were problematic, and suggests that the total scale score may be the most reliable and psychometrically sound. The only other study employing the measure was conducted by Aherne, Moran, and Lonsdale (2011). They used only the total CAMS-R scale score and did not report information about the reliability of the scale. An advantage of the CAMS-R is that it could easily be adapted to use in a specific context such as sport, as the items "I am able to focus on the present moment" and "I am able to accept the thoughts and feelings I have" appear relevant to athletes in a competitive environment. The total scale score was positively associated with positive well-being and negatively associated with depression, ruminating, brooding, and thought suppression. Furthermore, the authors' intent was to develop a multidimensional mindfulness measurement that was user friendly and simple in its focus but broad in its application purposes so that it could be adapted for diverse contexts.

A third mindfulness measure is the Kentucky Inventory of Mindfulness (KIMS) developed by Baer, Smith, and Allen (2004). This 39-item measure has four subscales

including Observe, Describe, Act with Awareness, and Accept without Judgment. Only scale scores are tabulated as there is no total scale score. Psychometric properties of the measure have been strong. The measure was specifically designed to be used to assess individuals' mindfulness skills, which provides a tool to track individuals' improvement when participating in mindfulness training interventions. The authors were intentional, as well, in desiring to create a measure that tapped into daily aspects of mindfulness such as sounds (e.g., "I pay attention to sounds, such as clocks, ticking, birds, chirping, or cars passing" and "I drive on 'automatic pilot") without paying attention to what I'm doing. Smith and Allen (2004) found that the Observe and Describe scales were significantly and positively associated with aspects of emotional intelligence and the Act with Awareness and Accept without Judgment scales were significantly and negatively associated with experiential avoidance. The KIMS has been used considerably in the mindfulness literature and is a useful instrument for general assessment of mindfulness skills.

One last mindfulness measure that has recently been developed specific for the sport context is the Mindfulness in Sport scale (MIS; Thienot et al., 2014). The 15-item multidimensional measure includes three scales: Awareness, Non-Judgmental and Refocusing, that focus athletes on their tendency to experience the described

mindfulness before and during sport performances. In their initial study, Awareness was positively associated with perfectionism and flow; Non-Judgmental was negatively associated with perfectionism and concentration disruption; Refocusing was negatively correlated to perfectionism, worry and concentration disruption. The study is recently published and the only one to employ this measure currently. Future research will be able to provide more information about the psychometric strength of the instrument. Because the psychometric properties were validated with undergraduate students and college athletes, the wording seems mature and appropriate for adult athletes only. When it comes to adolescent populations, the wording in CAMS-R is probably superior to the MIS's. Even though the MIS captures more mindful sport engagement, these 15 items capture only the time right before or during sport performance.

Mindfulness Research in Clinical Settings

Mindfulness-based stress reduction (MBSR) is frequently used in clinical populations. A representative of the MBSR practitioners, Kabat-Zinn (1982) earlier introduced a stress reduction and relaxation program to chronic pain patients who were referred by their physician. The program teaches the patients yoga, breathing, and observation of excessive emotion with no reaction, in order to shift individuals' attention to the present moment and be aware of ongoing internal and external events.

As a result, the mindfulness-based meditation group showed benefits as a behavioral approach to reduce over sensitive emotional and nervous reactions of clinical patients compared to the non-meditation group. Another study from Kabat-Zinn (1992) demonstrated that their MBSR program with anxiety disorders was successful in reducing symptoms of anxiety and panic, and in turn, maintaining these reductions after the program. In a similar manner, Segal and Zindel (2002) proposed their mindfulness-based cognitive therapy as a preventive approach against relapse of depression symptoms. Last but not least, Grossman et al. (2004) conducted a meta-analysis and concluded that the mindfulness-based intervention or meditation can be an efficacious procedure for stress, and pain reduction, and maintaining psychological well-being in various clinical (e.g., pain, cancer, heart disease, depression, and anxiety) and general populations. Taken together, mindfulness-based therapeutic approaches (i.e., interventions) which cultivate individuals' open-receptive and non-judgmental present focus attention and awareness, show certain effects on maintaining individuals' adaptive physical and mental conditions in clinical and general populations, which seemingly give important opportunities for individuals to learn optimal emotional regulation to cope with problems such as chronic disease and stress. Sport performance is optimized this self-regulatory mechanism.

Mindfulness and AGTP/Caring

Nicholls' research (1978) revealed that across the childhood years, children gradually acquire the cognitive function to accurately assess their ability. By the time youngsters reach adolescence, most are able to accurately judge their normative standing among peers. Prior to this, young children are less likely to be obsessed by normative comparison, and in fact, tend to be more mindfully engaged in activities because of their limited cognitive function. Nicholls pointed out how this is a fortunate situation for human kind, since youngsters don't typically experience the negative effects of comparing poorly to their peers. This protective mechanism keeps children giving high effort and focused on mastering the tasks at hand, which are characteristics of mindful engagement. On the other hand, when adolescents acquire a mature understanding of ability and develop a tendency to become ego-involving, a sole focus is their normative standing and performance outcome. Nicholls suggests that this focus becomes problematic in that it sets young people up to focus on those aspects where they lack control which likely leads to performance anxiety, the opposite consequence of being mindfully engaged.

As research on mindfulness based meditation has developed, researchers have also started measuring the participants' degree of being mindful as they need to confirm

the effectiveness that derives from the meditation. The mindfulness scales broadly have two trends. One is to measure mindfulness focused on inquiring individuals' attentional regulation characteristics in general (trait). Another is to measure individuals' mindfulness during specific events (state). The Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007), The Kentucky Inventory of Mindfulness Scale (KIMS; Baer et al., 2004), and The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) all assess the extent to which individuals evaluate their various mindful attention and awareness. These are achieved by being non-reactive, accepted, and tolerant with regard to emotional disturbance and distractive thoughts. In addition, being mindful includes individuals being aware of body and mind sensations in the present moment, focusing on the activity of the moment, and letting things go which are not under their control (Kabat-Zinn, 2012).

Mindfulness Based Approach in Sport Context

In the last decade, the concept of mindfulness has been increasingly considered in the sport psychology area. Sport psychology professionals see that mindfulness based approaches can benefit athletes' psychological well-being and in turn, enhance their performance. The characteristics of mindfulness include being nonjudgmentally open

and receptive to moment to moment attention and awareness of currently happening events (external) and feelings (internal). Mindfulness is a self-regulatory skill; it can be taught and has demonstrated some benefit in clinical psychology, such as individuals reporting less anxiety, rumination, and more life satisfaction. In sports psychology, several professionals have taught their mindfulness based procedures and have found noteworthy benefits for athletes' performance enhancement or maintenance. Gardner and Moore (2012) reviewed the mindfulness based interventions conducted over the last decade and concluded its effectiveness on cognitive improvement. Even though the Mindfulness-Acceptance-Commitment model established by Gardner and Moore (2004) is now publicly evaluated as "well-established" (the criteria were developed by the American Psychological Association), researchers are being called to collect more scientific evidence to further establish and describe the efficiency of mindfulness interventions and reveal the mechanisms behind the effectiveness of being mindfully engaged.

To provide a scope of mindfulness based intervention in sport, Gardner and Moore (Gardner & Moore, 2004, 2012; Moore, 2009) developed the Mindfulness – Acceptance – Commitment (MAC) approach which comprises eight sessions emphasizing five phases: 1) Psychoeducation, 2) Mindfulness, 3) Values Identification

and Commitment, 4) Acceptance, and 5) Integration and Practice (Moore, 2009; p. 296). After their first trial run of the intervention, they revised the approach to include seven step-by-step modules: 1) Preparing the Client with Psychoeducation, 2) Introducing Mindfulness and Cognitive Defusion, 3) Introducing Values and Values-Driven Behavior, 4) Introducing Acceptance, 5) Enhancing Commitment, 6) Skill Consolidation and Poise - Combining Mindfulness, Acceptance, and Commitment, and 7) Maintaining and Enhancing Mindfulness, Acceptance, and Commitment (Moore, 2009; p. 298). The MAC protocol intervention was included in the first published mindfulness based sport performance enhancement procedure. It demonstrated some efficacious evidence for mindfulness training such as increased coach-rated aggressive practice (i.e., to recognize quickly when opportunities avail such as a wide open shot), competition behavior: coach-rated reduced athletes' avoidance (i.e., effort to escape from or control their uncomfortable emotion), and increased athletes' flow experiences, which may play key roles for athletes' performance enhancement (Gardner & Moore, 2012).

In a similar manner to Gardner and Moore's MAC, Kaufman, Glass, and Arnkoff (2009) proposed Mindful Sport Performance Enhancement (MSPE), another intervention to heighten athletes' mindful engagement in sport. They incorporated

611 modified versions of previously developed mindfulness meditations (Kabat-Zinn, 1982;
612 Segal & Zindel, 2002) such as the raisin exercise, the body scan, mindful breathing, the
613 sitting meditation, mindful yoga, and the walking meditation. They discovered that
614 when athletes' participated in the intervention, an outcome was that the athletes'
615 absorption in the tasks at hand were heightened via their state and trait flow experiences.
616 During their MSPE sessions, they found athletes reported overall higher state flow
617 experiences and higher scores on the unambiguous feedback subscale across the four
618 weeks.

619 There were also a number of significant correlations between the dispositional
620 flow scales (i.e., Challenge-Skill Balance; Merging of Action and Awareness; Clear
621 Goals; Unambiguous Feedback; Concentrating on the Task at Hand; Having a Sense of
622 Control; Experiencing a Loss of Self-Consciousness; and Autotelic Experience) with
623 state mindfulness. All researchers suggest this may be related to performance
624 enhancement (De Petrillo, Kaufman, Glass, & Arnkoff, 2009; Kaufman et al., 2009;
625 Thompson, Kaufman, De Petrillo, Glass, & Arnkoff, 2011). They also used
626 psychometric assessments for measuring important psychological constructs for
627 performance enhancement (e.g., sport anxiety, perfectionism, thought disruption, and
628 sport confidence). However, the findings (Kaufman et al., 2009) from their pre-post t-

test analyses are not ideal due to their low sample size (i.e., 11 archers and 21 golfers) and their skewed gender ratio (i.e., 9 = men and 14 women).

Even with these limitations they found significant ($p < .05$) pre and post positive changes in several trait measures including the parental expectation of perfectionism (archers), dispositional optimism (archers), mindfulness composite of KIMS (archers), and the describe subscale (describing or noting in a non-judgmental manner what was going on) in KIMS (golfers). In summary, their results suggest that sport and gender specific differences might be evident in mindfulness interventions. Additionally, same research group as Kaufman's, Thompson et al. (2011) concluded their one year MPSE follow up as a promising protocol for sport performance enhancement and discussed important future directions such as recruiting team sport athletes and those who are zealous about enhancing their performance.

In addition to examining how athletes' can undergo mindfulness training, another question of interest is the relationship between mindfulness in daily practice versus competitive game situations. Consistent with previous studies, Kee and John Wang (2008) found associations of Singapore college athletes' mindfulness propensity with their dispositional flow, and mental skills adoption in practice and competition. In a similar vein, Bernier, Thienot, Codron, and Fournier (2009) reported a parallel

relationship between mindfulness and flow experiences. These two studies highlight the co-occurrence of individuals' reported mindfulness and flow, and raise the discussion of whether individuals' trait mindfulness is likely to induce their state mindfulness, which is likely influenced by contextual factors. For example, athletes may find it more challenging to become mindfully engaged if their coach is yelling and screaming in a negative manner, or their teammates are not supportive. Athletes' personal definitions of success may also impact their ability to sustain mindful engagement in sport. It will be important in future research to consider individuals' trait versus state mindfulness, and the factors influencing each.

In summary, individuals' reported mindfulness seems to be a difference maker for their flow experiences; mindfully engaged individuals are more likely to experience flow in a variety of contexts, including sport. An interesting question that evolves from the current research is whether creating a positive and supportive motivational climate on sport teams may be a natural precursor to help athletes become mindfully engaged. Specifically, if athletes perceive a task-involving climate where the focus is on their effort, improvement and mastery of skills, and a caring climate where they feel strong support from their coaches and teammates, it follows that they would be more likely to focus on the moment as there would be fewer distractions related to worry about

making mistakes, not performing well normatively, and losing. In contrast, athletes in strong ego-involving climates where the focus is on outcome, outperforming others, receiving punishment for mistakes, would be more likely to struggle with focusing on the task at hand because the implications of failure are paramount.

Little research has examined AGPT tenets together with mindfulness, with the exception of one study of interest. Jackson and Roberts (1992) examined the peak performance of NCAA Division I athletes as well as their flow states, goal orientations, perceived ability, and subjective best–worst performance evaluation, and challenges–skills ratings (responding to the best and worst performance situations). As a central topic of AGPT, they questioned college athletes about their perceptions of ability in two manners. First, they asked them to describe their ability as they purely felt without asking with regard to social comparison criteria. Second, they asked the athletes about their ability in relation to most of the athletes they competed against previously. Indeed, the two differentiated manners were highly correlated, which means they perceived their ability both subjectively and normatively. Thus, the authors eventually averaged them out and included the results in the other analyses. They concluded that being task oriented and competent in their sport might be triggers to be in flow and flow states are typically associated with more frequent peak performances in elite college athletics. Yet

their findings, as they carefully concluded, suggests flow can be achieved via a perceived balance between the challenges and individuals' skills in a situation.

As a final note for this literature review, examining individuals' goal orientations and motivational climate are an important new direction for mindfulness research from the view of sport psychology. These two approaches of mindfulness (e.g., being engaged in the moment that is occurring) and experiencing a C/TI climate (i.e., focusing on personal effort and improvement, cooperation with peers, mistakes as a learning opportunity, and feeling a sense that each person on the team is treated with kindness and respect) may be conceptually distinct, but arguably strongly connected. Research examining these constructs may be an important area of inquiry for athletes, sport administrators, coaches, and parents because of the aforementioned benefits of being in the moment. Kabat-Zinn (2012) claimed mindfulness as "Anything and everything can become our teacher of the moment, reminding us of being fully present: …" (p. 55). In a similar manner, Nicholls and Hazzard (1993) suggested an optimal learning environment may occur when teachers take the approach that students helping students learn is advantageous, and not considered cheating. Interestingly, it may be that adults are driving children to focus on normative comparison, but children may be more naturally focused on learning and being in the moment, particularly if adults weren't

701 driving their focus in another direction. These researchers' observations may be
702 especially relevant in a sport context. For this reason, this current dissertation
703 hypothesizes adolescent athletes' perceptions of a positive motivational climate (C/TI)
704 will be significantly associated with their increased mindful engagement.
705

706 **References**

707 Aherne, C., Moran, A. P., & Lonsdale, C. (2011). The Effect of Mindfulness Training
708 on Athletes' Flow: An Initial Investigation. *Sport Psychologist, 25*(2), 177-189.
709 Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of Mindfulness by Self-
710 Report: The Kentucky Inventory of Mindfulness Skills. *Assessment, 11*(3), 191-
711 206. doi: 10.1177/1073191104268029
712 Balaguer, I., Duda, J. L., & Crespo, M. (1999). Motivational climate and goal
713 orientations as predictors of perceptions of improvement, satisfaction and coach
714 ratings among tennis players. / Climat motivationnel et orientations vers des buts
715 d ' accomplissement permettent de predire la perception par niveau de
716 satisfaction et l ' image qu ' ils ont de leur entraineur. *Scandinavian Journal of*
717 *Medicine & Science in Sports, 9*(6), 381-388.
718 Bernier, M., Thienot, E., Codron, R., & Fournier, J. F. (2009). Mindfulness and
719 Acceptance Approaches in Sport Performance. *Journal of Clinical Sport*
720 *Psychology, 3*(4), 320-333.
721 Black, D. S., Sussman, S., Johnson, C. A., & Milam, J. (2012). Psychometric
722 Assessment of the Mindful Attention Awareness Scale (MAAS) Among Chinese
723 Adolescents. *Assessment, 19*(1), 42-52. doi: 10.1177/1073191111415365

Bortoli, L., Bertollo, M., Comani, S., & Robazza, C. (2011). Competence, achievement goals, motivational climate, and pleasant psychobiosocial states in youth sport. *Journal of Sports Sciences, 29*(2), 171-180. doi: 10.1080/02640414.2010.530675

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822+.

Brunel, P. C. (1999). Relationship between achievement goal orientations and perceived motivational climate on intrinsic motivation. / Relation entre les orientations vers des buts d ' accomplissement et la perception du climat motivationnel: effets sur la motivation intrinseque. *Scandinavian Journal of Medicine & Science in Sports, 9*(6), 365-374.

Burgess, A. (2009). *Parental influence on youth motivation to be physically active.* (Ph.D. 3382672), University of Northern Colorado, United States -- Colorado. Retrieved from http://www2.lib.ku.edu:2048/login?url=http://proquest.umi.com/pqdweb?did=1898632401&Fmt=7&clientId=42567&RQT=309&VName=PQD

741 Christopher, M. S., Charoensuk, S., Gilbert, B. D., Neary, T. J., & Pearce, K. L. (2009).
742 Mindfulness in Thailand and the United States: a case of apples versus oranges?
743 *Journal of Clinical Psychology, 65*(6), 590-612. doi: 10.1002/jclp.20580
744 Cumming, S. P., Smoll, F. L., Smith, R. E., & Grossbard, J. R. (2007). Is Winning
745 Everything? The Relative Contributions of Motivational Climate and Won-Lost
746 Percentage in Youth Sports. *Journal of Applied Sport Psychology, 19*(3), 322-
747 336.
748 Daniels, A. M. (2007). Cooperation versus competition: Is there really such an issue?
749 *New Directions for Youth Development, 2007*(115), 43-56. doi: 10.1002/yd.222
750 De Petrillo, L. A., Kaufman, K. A., Glass, C. R., & Arnkoff, D. B. (2009). Mindfulness
751 for Long-Distance Runners: An Open Trial Using Mindful Sport Performance
752 Enhancement (MSPE). *Journal of Clinical Sport Psychology, 3*(4), 357-376.
753 Deci, E., & Ryan, R. (2008). Self-Determination Theory: A Macrotheory of Human
754 Motivation, Development, and Health. *Canadian Psychology, 49*(3), 182.
755 Deci, E. L. (1971). EFFECTS OF EXTERNALLY MEDIATED REWARDS ON
756 INTRINSIC MOTIVATION. *Journal of Personality and Social Psychology,*
757 *18*(1), 105-&. doi: 10.1037/h0030644

758 Deci, E. L., Betley, G., Kahle, J., Abrams, L., & Porac, J. (1981). WHEN TRYING TO
759 WIN - COMPETITION AND INTRINSIC MOTIVATION. *Personality and*
760 *Social Psychology Bulletin, 7*(1), 79-83. doi: 10.1177/014616728171012
761 Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human
762 Needs and the Self-Determination of Behavior. *Psychological Inquiry, 11*(4),
763 227-268.
764 Duda, J. L., & Balaguer, I. (2007). *Coach-Created Motivational Climate*. Champaign,
765 IL, US: Human Kinetics.
766 Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J.-P. (2007).
767 Mindfulness and Emotion Regulation: The Development and Initial Validation
768 of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). *Journal*
769 *of Psychopathology and Behavioral Assessment, 29*(3), 177-190. doi:
770 10.1007/s10862-006-9035-8
771 Fry, M. D. (2010). Creating a Positive Climate for Young Athletes from Day 1. *Journal*
772 *of Sport Psychology in Action, 1*(1), 33-41.
773 Fry, M. D., & Gano-Overway, L. A. (2010). Exploring the Contribution of the Caring
774 Climate to the Youth Sport Experience. *Journal of Applied Sport Psychology,*
775 *22*(3), 294-304.

Gano-Overway, L. A. (2001). The role of task- and ego-involving goals and perceived ability on self-regulatory factors during a simple motor task. Eugene, OR; United States: Microform Publications, University of Oregon.

Gano-Overway, L. A., & Ewing, M. E. (2004). A longitudinal perspective of the relationship between perceived motivational climate, goal orientations, and strategy use. *Research Quarterly for Exercise and Sport, 75*(3), 315(311).

Gano-Overway, L. A., Magyar, T. M., Mi-Sook, K., Newton, M., Fry, M. D., & Guivernau, M. R. (2009). Influence of Caring Youth Sport Contexts on Efficacy-Related Beliefs and Social Behaviors. *Developmental Psychology, 45*(2), 329-340. doi: 10.1037/a0014067

Gao, Z., & Newton, M. (2009). Examining the Mediating Role of Strategy Use on Students' Motivation and Persistence/Effort in Physical Education. *Journal of Sport Behavior, 32*(3), 278-297.

Gardner, F. L., & Moore, Z. E. (2004). A mindfulness-acceptance-commitment-based approach to athletic performance enhancement: Theoretical considerations. *Behavior Therapy, 35*(4), 707-723. doi: http://dx.doi.org/10.1016/S0005-7894(04)80016-9

Gardner, F. L., & Moore, Z. E. (2012). Mindfulness and Acceptance Models in Sport Psychology: A Decade of Basic and Applied Scientific Advancements. *Canadian Psychology, 53*(4), 309-318. doi: 10.1037/a0030220

Gershgoren, L., Tenenbaum, G., Gershgoren, A., & Eklund, R. C. (2011). The effect of parental feedback on young athletes' perceived motivational climate, goal involvement, goal orientation, and performance. *Psychology of Sport and Exercise, 12*(5), 481-489. doi: 10.1016/j.psychsport.2011.05.003

Goudas, M. (1998). MOTIVATIONAL CLIMATE AND INTRINSIC MOTIVATION OF YOUNG BASKETBALL PLAYERS. *Perceptual and Motor Skills, 86*(1), 323-327. doi: 10.2466/pms.1998.86.1.323

Goudas, M., Biddle, S., & Fox, K. (1994). Achievement Goal Orientations and Intrinsic Motivation in Physical Fitness Testing With Children. *Pediatric Exercise Science, 6*(2), 159-167.

Gould, D., Flett, R., & Lauer, L. (2012). The relationship between psychosocial developmental and the sports climate experienced by underserved youth. *Psychology of Sport and Exercise, 13*(1), 80-87. doi: 10.1016/j.psychsport.2011.07.005

Gregório, S., & Pinto-Gouveia, J. (2013). Mindful attention and awareness: Relationships with psychopathology and emotion regulation. *The Spanish journal of psychology, 16*. doi: 10.2307/1411318

Grossman, P., Niemann, L., Schmidt, S., Walach, H., Grossman, P., Niemann, L., . . . Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research, 57*(1), 35-43. doi: 10.1016/S0022-3999(03)00573-7

Gutiérrez, M., Ruiz, L.-m., & López, E. (2010). *Perceptions of Motivational Climate and Teachers' Strategies to Sustain Discipline as Predictors of Intrinsic Motivation in Physical Education* (Vol. 13). The Spanish Journal of Psychology.

Hatton, S. D. N., Nel. (2002). Interview with Nel Noddings: Reflections on Becoming an Educator. *Active Learner: A Foxfire Journal for Teachers, v7*(n1), p11-13.

Jackson, S. A., & Roberts, G. C. (1992). Positive Performance States of Athletes: Toward a Conceptual Understanding of Peak Performance. *Sport Psychologist, 6*(2), 156-171.

Jõesaar, H., Hein, V., & Hagger, M. S. (2011). Peer influence on young athletes' need satisfaction, intrinsic motivation and persistence in sport: A 12-month prospective study. *Psychology of Sport & Exercise, 12*(5), 500-508.

Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, *4*(1), 33-47. doi: http://dx.doi.org/10.1016/0163-8343(82)90026-3

Kabat-Zinn, J. (2003). Mindfulness-Based Interventions in Context: Past, Present, and Future. *Clinical Psychology: Science and Practice*, *10*(2), 144-156. doi: 10.1093/clipsy.bpg016

Kabat-Zinn, J. (2012). *Mindfulness for beginners: reclaiming the present moment - and your life*. Boulder, CO Sounds True, Inc.

Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., . . . Santorelli, S. F. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *The American Journal of Psychiatry*, *149*(7), 936-943.

Kaufman, K. A., Glass, C. R., & Arnkoff, D. B. (2009). Evaluation of Mindful Sport Performance Enhancement (MSPE): A New Approach to Promote Flow in Athletes. *Journal of Clinical Sport Psychology*, *3*(4), 334-356.

Kee, Y. H., & John Wang, C. K. (2008). Relationships between mindfulness, flow dispositions and mental skills adoption: A cluster analytic approach. *Psychology*

of Sport and Exercise, *9*(4), 393-411. doi: http://dx.doi.org/10.1016/j.psychsport.2007.07.001

Kumar, S. M. (2005). *Grieving Mindfully: A Compassionate And Spiritual Guide To Coping With Loss*. Oakland, CA: New Harbinger.

Kumar, S. M., Feldman, G. C., & Hayes, A. M. (2005). Change in mindfulness and emotion regulation in an integrative therapy for depression. *Manuscript under review*.

Larson, A., & Silverman, S. J. (2005). Rationales and practices used by caring physical education teachers. *Sport, Education and Society*, *10*(No.2), 175-193.

MacDonald, D. J., Côté, J., Eys, M., & Deakin, J. (2011). The Role of Enjoyment and Motivational Climate in Relation to the Personal Development of Team Sport Athletes. *Sport Psychologist*, *25*(1), 32-46.

McAuley, E., Duncan, T., & Tammen, V. V. (1989). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: a confirmatory factor analysis. / Proprietes psychometriques de l ' inventaire de motivation intrinseque dans l ' environnement du sport de competition: analyse confirmatoire de facteurs. *Research Quarterly for Exercise & Sport*, *60*(1), 48-58.

Moore, Z. E. (2009). Theoretical and Empirical Developments of the Mindfulness-Acceptance-Commitment (MAC) Approach to Performance Enhancement. *Journal of Clinical Sport Psychology, 3*(4), 291-302.

Newton, M., Duda, J. L., & Yin, Z. (2000). Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire - 2 in a sample of female athletes. *Journal of Sports Sciences, 18*(4), 275-290. doi: 10.1080/026404100365018

Newton, M., Fry, M., Watson, D., Gano-Overway, L., Kim, M. S., Magyar, M., & Guivernau, M. (2007). Psychometric properties of the caring climate scale in a physical activity setting. *Revista de Psicología del Deporte, 16*(1), 67-84.

Newton, M., Watson, D., Gano-overway, L., Fry, M., Kim, M.-S., & Magyar, M. (2007). The Role of a Caring-Based Intervention in a Physical Activity Setting. *The Urban Review, 39*(3), 281.

Newton, M., Watson, D. L., Kim, M.-S., & Beacham, A. O. (2006). Understanding Motivation of Underserved Youth in Physical Activity Settings. *Youth & Society, 37*(3), 348-371. doi: 10.1177/0044118x05278964

Nicholls, J. G. (1984). ACHIEVEMENT-MOTIVATION - CONCEPTIONS OF ABILITY, SUBJECTIVE EXPERIENCE, TASK CHOICE, AND

PERFORMANCE. *Psychological Review, 91*(3), 328-346. doi: 10.1037/0033-295x.91.3.328

Nicholls, J. G. (1989). The competitive ethos and democratic education. *Cambridge, MA, US: Harvard University Press.*

Nicholls, J. G., & Hazzard, S. P. (1993). *Education As Adventure: Lessons from the Second Grade*: Teachers College Press.

Ntoumanis, N., & Vazou, S. (2005). Peer Motivational Climate in Youth Sport: Measurement Development and Validation. *Journal of Sport & Exercise Psychology*, *27*(4), 432.

Ommundsen, Y., Roberts, G. C., & Kavussaun, M. (1999). Task-involving climate is tops. *Journal of Sport & Exercise Psychology*, *21*(2), 182.

Papaioannou, A., Marsh, H. W., & Theodorakis, Y. (2004). A Multilevel Approach to Motivational Climate in Physical Education and Sport Settings: An Individual or a Group Level Construct? *Journal of Sport & Exercise Psychology, 26*(1), 90-119.

Pensgaard, A. M., & Roberts, G. C. (2002). Elite athletes' experiences of the motivational climate: the coach matters. *Scandinavian Journal of Medicine & Science in Sports*, *12*(1), 54-59.

900 Ryan, R. M., Kuhl, J., & Deci, E. L. (1997). Nature and autonomy: An organizational
901 view of social and neurobiological aspects of self-regulation in behavior and
902 development. *Development and Psychopathology, 9*(04), 701-728.
903 Ryan, R. M., Mims, V., & Koestner, R. (1983). RELATION OF REWARD
904 CONTINGENCY AND INTERPERSONAL CONTEXT TO INTRINSIC
905 MOTIVATION - A REVIEW AND TEST USING COGNITIVE
906 EVALUATION THEORY. *Journal of Personality and Social Psychology, 45*(4),
907 736-750. doi: 10.1037/0022-3514.45.4.736
908 Sarrazin, P., Guillet, E., & Cury, F. (2001). The effect of coach's task- and ego-
909 involving climate on the changes in perceived competence, relatedness, and
910 autonomy among girl handballers. *European Journal of Sport Science, 1*(4).
911 Scott, C., Ken, H., & Lynn, K. (2003). Intrinsic motivation in youth sport: Goal
912 orientations and motivational climate. *Journal of Physical Education New*
913 *Zealand, 36*(1), 15.
914 Segal, Z. V., & Zindel, V. S. (2002). *Mindfulness-based cognitive therapy for*
915 *depression : a new approach to preventing relapse*. New York: New York :
916 Guilford Press.

Seifriz, J. J., Duda, J. L., & Likang, C. (1992). The Relationship of Perceived Motivational Climate to Intrinsic Motivation and Beliefs About Success in Basketball. *Journal of Sport & Exercise Psychology*, *14*(4), 375-391.

Shapiro, S. L., Oman, D., Thoresen, C. E., Plante, T. G., & Flinders, T. (2008). Cultivating mindfulness: effects on well-being. *Journal of Clinical Psychology, 64*(7), 840-862. doi: 10.1002/jclp.20491

Smith, R. E., Cumming, S. P., & Smoll, F. L. (2008). Development and Validation of the Motivational Climate Scale for Youth Sports. *Journal of Applied Sport Psychology*, *20*(1), 116-136. doi: 10.1080/10413200701790558

Smith, R. E., Smoll, F. L., & Cumming, S. P. (2007). Effects of a Motivational Climate Intervention for Coaches on Young Athletes' Sport Performance Anxiety. *Journal of Sport & Exercise Psychology*, *29*(1), 39-59.

Smith, R. E., Smoll, F. L., & Cumming, S. P. (2009). Motivational climate and changes in young athletes' achievement goal orientations. *Motivation & Emotion, 33*(2), 173-183. doi: 10.1007/s11031-009-9126-4

Thienot, E., Jackson, B., Dimmock, J., Grove, J. R., Bernier, M., & Fournier, J. F. (2014). Development and preliminary validation of the mindfulness inventory

for sport. *Psychology of Sport and Exercise, 15*(1), 72-80. doi: http://dx.doi.org/10.1016/j.psychsport.2013.10.003

Thompson, R. W., Kaufman, K. A., De Petrillo, L. A., Glass, C. R., & Arnkoff, D. B. (2011). One Year Follow-Up of Mindful Sport Performance Enhancement (MSPE) With Archers, Golfers, and Runners. *Journal of Clinical Sport Psychology, 5*(2), 99-116.

Treasure, D. C., & Roberts, G. C. (1995). Applications of Achievement Goal Theory to Physical Education: Implications for Enhancing Motivation. *Quest (00336297), 47*(4), 475-489.

Ullrich-French, S., & Smith, A. L. (2009). Social and motivational predictors of continued youth sport participation. *Psychology of Sport and Exercise, 10*(1), 87-95. doi: 10.1016/j.psychsport.2008.06.007

Vazou, S. (2010). Variations in the Perceptions of Peer and Coach Motivational Climate. *Research Quarterly for Exercise and Sport, 81*(2), 199-211.

Vazou, S., Ntoumanis, N., & Duda, J. L. (2006). Predicting young athletes' motivational indices as a function of their perceptions of the coach- and peer-created climate. *Psychology of Sport and Exercise, 7*(2), 215-233. doi: 10.1016/j.psychsport.2005.08.007

952 Walling, M. D., Duda, J. L., & Chi, L. (1993). The Perceived Motivational Climate in
953 Sport Questionnaire: construct and predictive validity. . *Journal of Sport &*
954 *Exercise Psychology, 15*(2), 172-183.
955 Weinberg, R. S. (1979). Intrinsic motivation in a competitive setting. . *Medicine &*
956 *Science in Sports, 11*(2), 146-149.
957 Weiss, M. R., Amorose, A. J., & Wilko, A. M. (2009). Coaching Behaviors,
958 Motivational Climate, and Psychosocial Outcomes Among Female Adolescent
959 Athletes. *Pediatric Exercise Science, 21*(4), 475-492.
960

Assent Form for Participants in the Study: High School Athletes' Perceptions of Motivation

Hi, my name is Mary Fry and I teach sport and exercise psychology at KU. My graduate student, Susumu Iwasaki, and I are interested in motivation in high school athletes'. We are inviting you to complete a survey that has a lot of questions that ask you about your sport experience. We believe studies like this are important because they help coaches become better at setting up sport so that athletes have positive experiences.

Our survey is not like an exam; there are no right or wrong answers. We are just interested in what high school athletes think and feel about their sport experiences. These surveys will be anonymous; your teammates and coaches will not see how you respond.

We plan to present the results from this study at a conference and publish the results in a journal. When we do this we wouldn't have any players' specific results, just the group's overall average scores. It would all be confidential, as we are not asking you to put your name on the survey. To include your results in the overall average scores, we have to have your parents' permission and yours. We only want to include players who want to be part of this, so it's not a big deal if you decide you don't want to. If you do want to complete the survey, you'll need to take this permission form home and have your parents sign it. Even if your parents say it's okay, it's still up to you to make the decision of whether you want to complete this survey. Do you have any question?